City and County of San Francisco

San Francisco City Planning Commission

Environmental Impact Report

388 Market Street Building

DRAFT 81.195E

Publication Date: April 9, 1982

Public Comment Period: April 9, 1982 through May 19, 1982

Public Hearing Date: May 13, 1982

Written comments should be sent to the Environmental Review Officer, 45 Hyde Street, San Francisco, CA 94102

City and County of San Francisco

San Francisco City Planning Commission

Environmental Impact Report

388 Market Street Building

DRAFT 81.195E

Publication Date: April 9, 1982

Public Comment Period: April 9, 1982 through May 19, 1982

Public Hearing Date: May 13, 1982

Written comments should be sent to the Environmental Review Officer, 45 Hyde Street, San Francisco, CA 94102

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF FIGURES (continued)

I. SUMMARY

PROJECT DESCRIPTION: Honorway Investment Corporation proposes to construct a combined office and residential building on Market St. The triangular-shaped 18,360-sq.-ft. site is bounded by Market, Pine, and Front Sts. and is adjacent to the Embarcadero Station of the Market St. subway. The site is centrally located in the downtown area; it is included in the City's C-3-O (Downtown Office) Use District. Surrounding the project site are primarily high-rise buildings with heights varying from 14 to 38 stories. A total of 15 additional projects of a similar office and/or residential nature have been proposed, approved, or are under construction, in the surrounding blocks.

The 26-story building would be about 375 ft. tall and would provide a total of 342,900 gross sq. ft. of floor area with a total of about 234,500 sq. ft. of office space. The project would include two levels of subsurface parking accommodating about 47 vehicles. Two loading docks, accessible from Front St. would be provided at grade. The first and second floors would contain about 10,000 gross sq. ft. of retail space; the second floor would also contain about 9,300 sq. ft. of office space. There would be a double-height public gallery and separate lobbies for the office and residential portions of the building.

The third to 18th floors would contain about 225,200 gross sq. ft. of office space. The 19th floor would contain mechanical equipment and about 3,800 sq. ft. of space for an athletic health club to serve as a common facility for residents and employees of the building. The top seven floors would include a total of about 57 market-rate condominium units, as well as some mechancial service areas. The gross floor area for the residential portion of the building would be about 85,900 sq. ft. There would be a rooftop observation deck. Private balconies for the condominiums would satisfy the useable open space requirements of the City Planning Code for residential use.

The building base would be triangular in form. A building setback would be provided above the second floor, at a height of about 40 ft. This setback would provide pedestrian scale on Market St. Above this setback, a rounded, semi-circular frontage would be located along Front St. A recess would be formed in the building tower at the midpoint of both the Market St. and Pine St. facades. The building would narrow approaching the intersection of Pine and Market Sts. with the "prow" oriented towards the foot of Market St.

The proposed building would have a public gallery, widened sidewalks and multiple building entrances. These features are intended to shorten walking distances and improve pedestrian access to work, retail and residential spaces and to transit facilities. The entry plazas and public gallery would be landscaped.

Construction is expected to begin in late 1982 and to be completed in 20 months; initial project occupancy is scheduled for late 1984, with full occupancy expected in early 1985. Development costs (including land cost) would be about $66.4 million (1981 dollars).

ENVIRONMENTAL SETTING: The site is occupied by two buildings: 320 Market St. and 340 Market St. The 320 Market St. building is nine stories tall with a drugstore on the ground level and eight floors of office space. The 340 Market St. building is eight stories tall and contains a subsurface parking garage, a savings bank and men's clothing store on the ground level, and seven floors of office space. Businesses on the site employ about 600 persons.

The site is served by Muni and BART. Passenger pick-up points for A-C Transit, SamTrans, Golden Gate Transit, and Southern Pacific Transportation Company (railroad) are within several blocks of the site. About 13,000 off-street public parking spaces are located within 2,000 ft. of the site.

ENVIRONMENTAL IMPACTS: Issues requiring no further study as determined in the Final Initial Study for the project (see Appendix A, p. 161) include: land use compatibility, operational noise, biology, construction-related air quality, public services, health hazards, and cultural and historic factors.

Land use and zoning. (See Section IV, p. 55.) Land use would be similar to the present site use except for the provision of housing, which is consistent with evolving City policy. The project would be consistent with the San Francisco Comprehensive Plan and policies stated for the C-3-O district. The building height would be about 225 ft. less than the maximum of 600 ft. permitted. The building length and diagonal measurement would each be 220 ft., exceeding the maximum permitted length and diagonal dimension of 170 ft. and 200 ft., respectively.

The total gross floor area for the building would be approximately 342,900 sq. ft., representing a Floor Area Ratio (FAR) of 18.7:1; this exceeds the basic FAR of 14:1 permitted under Section 124 of the City Planning Code. Floor area bonuses allowed under Section 126 of the City Planning Code could permit space in addition to the basic FAR. Permitted bonus space could be used only for residential uses under the existing Interim Controls on downtown high-rise office development (Municipal Ordinance 240-80, effective June 1, 1980). Requested bonus space of about 85,900 sq. ft. would result in a total gross floor area for the building of about 342,900 sq. ft.

The project as proposed is inconsistent with the Department of City Planning document entitled, Guiding Downtown Development (GDD), in the following aspects: it exceeds the GDD recommendation for a maximum commercial FAR of 12:1, by 2:1; and the transfer of bulk provisions contained in GDD to reduce the size of upper floors would not be met by the project. The project would be generally consistent, however, with the GDD policy to provide retail space on the ground floor and with the GDD additional FAR for on-site housing of 5:1 (project residential FAR would be 4.7:1).

Employment, housing and fiscal. (See Section IV, p. 75.) A total of 980 permanent jobs would be provided by the project, a net increase of 380 positions. The multiplier effect would provide an additional 440 jobs in other sectors of the economy. The project would require about 250 person-years of construction labor; an average of about 150 full-time jobs during the 20-month construction period. The multiplier effect on construction jobs would result in 400 additional person-years of employment during the construction period. The office space would contribute to the

growing amount of office development available in the downtown area. The 57 condominium units would be insufficient to meet the net housing demand from the project's employees that would live within San Francisco. The market-price of these units would be above the purchase capabilities of about 70 percent of the employees that would work within the proposed building. Revenues to the City would increase in proportion to the increase in floor space and employment on the project site; additional demand for City services generated by the project would produce costs to the City.

Other impacts. The site vicinity is heavily shaded by existing high-rise buildings. No public parks would be shaded by the proposed building; during winter afternoons, the project would contribute to shadow patterns on the plaza of the 101 California St. building. The project would generate a demand for about 410 parking spaces, and only 47 spaces would be provided. That the project would not meet the parking demand is consistent with the overall policy contained in the Revisions to the Transportation Element of the Master Plan to discourage the addition of new long-term parking spaces in the downtown. The two off-street loading spaces proposed would conform to the number required by the City Planning Code and City Planning Commission Resolution No. 9286. The loading stalls would comply with the dimensions required by the Code, but would not meet the minimum dimensions required by Resolution No. 9286. Project-related air emissions would have no measureable impact on local or regional air pollutant concentrations; however, the project would contribute to impacts from cumulative downtown development. Construction noise, especially piledriving, would create noise intrusions affecting office activities in buildings closest to the site. Because of the greater floor space and the number of employees and residents on the site, energy demands would increase. The use of energy would be controlled so that, in comparison to the present buildings on the site, the new building would be more energy efficient and would use less energy per sq. ft. Dewatering of the site would result in the discharge of about 15 million gallons of water into the existing storm drain system over a period of seven months during project construction.

MITIGATION MEASURES: (See Section V., p. 118.) Mitigation measures which are specific to the proposed project and not required by governmental statutes or laws include: relocation assistance to the existing tenants with long-term leases; provision of a transportation broker who would encourage the use of transit systems; bicycle parking and access facilities for the handicapped; preferential parking for car pool and van pool vehicles; incorporation of energy saving devices and equipment into the building; provision of internal security measures and alarms; and, features to conserve water and collect solid waste for recycling purposes.

ALTERNATIVES TO THE PROPOSED PROJECT: (See Section VIII., p. 130.) Six alternatives to the proposed project have been considered by the sponsor.

Alternative One would provide on-site housing at about the rate of 640 sq. ft. of residential use per 1,000 sq. ft. of office space, as encouraged by Guiding Downtown Development (GDD). This alternative would have a design similar to the proposed project and would have the same parking, retail and office floors as proposed. The residential floor area would not be consistent with identified bonus space and would not conform to the City Planning Code; modification of the Code would be required to allow approval of this alternative. Alternative One would be about 430 ft. tall, and contain 30 stories. The number of condominium units would increase to about 90, in comparison to about 57 for the project. This alternative would contain a total of about 401,000 sq. ft. for an FAR of 21.8:1, compared to the proposed FAR of 18.7:1. Urban design, shadow and energy use effects would be increased because of the greater size of Alternative One in comparison to the project. An amendment to the City Planning Code which could allow the amount of on-site housing proposed for this alternative would encourage the provision of additional on-site housing in future high-rise development. The project sponsor would develop this alternative if the Planning Code were modified to permit it.

Alternative Two incorporates the basic FAR of 14:1 with the pre-Interim Controls bonuses for additional office space. Alternative Two would be 26 stories tall and about 375 ft. tall. No residential use would be provided on the site. About 342,900 sq. ft. of commercial space representing an FAR of

18.7:1 would be provided. This alternative would be similar to the project in design and form and would contain the same dimensions as the project. There would be one level of subsurface parking and two loading docks. The building would contain two floors of retail space, 23 floors of office use and a mechanical service floor. Alternative Two would not satisfy any housing demands which would be generated by on-site office space. Alternative Two would have increased impacts in comparison to the proposed project for the office use; residential use impacts would be eliminated. This alternative has been rejected because it does not comply with the limitations on the use of floor area bonus required by the Interim Controls.

Alternative Three would be designed to comply with the guidelines contained in GDD. A 24-story combined office and residential building 340 ft. tall and having 220,000 gross sq. ft. of office and commercial space would be provided. Alternative Three would have an FAR of 12:1 for the office/commercial uses, compared to 14:1 for the project. Residential use would be increased to 91,800 gross sq. ft. for an FAR of 5:1, resulting in the provision of about 61 residential units. The additional GDD recommended housing requirement of about 42,600 sq. ft. would be constructed off-site. One level of subsurface parking and three loading docks would be provided. Artwork would be included in the public gallery. Residential open space would be provided by private balconies for individual condominiums; in addition, this alternative would partially satisfy the GDD requirement to provide recreation and open space for the commercial portion of the building. The impacts of this alternative would be similar to the proposed project, however the building would contain two fewer stories and about 31,100 sq. ft. less floor area. The project sponsor has rejected Alternative Three as not providing the amount of office space permitted under the City Planning Code.

Alternative Four would comply with the City Planning Code in all respects. This alternative would contain about 257,000 gross sq. ft. of commercial space for an FAR of 14:1. Alternative Four would be about 315 ft. tall and contain 22 stories. There would be two levels of retail space containing a total of 10,000 sq. ft., 19 floors of office use, and a mechanical floor. There would be no off-street parking and no residential development on the site; no bonus floor area would be used. The building tower would be reduced to 170 ft. in

length and 200 ft. in maximum dimension to conform with the bulk provisions of the City Planning Code. Impacts of the office use under this alternative would be the same as those described for the proposed project. Residential use impacts would be eliminated. Alternative Four would not satisfy any portion the housing demand generated by the office use and, for this reason, has been rejected by the project sponsor.

Alternative Five would develop a 25-story combined office and residential building approximately 365 ft. tall. This Alternative would feature access to all loading and off-street parking on Pine St., rather than on Front St. as proposed for the project. Alternative Five would contain about 257,000 gross sq. ft. of commercial space for an FAR of 14:1. Residential space would occupy about 80,600 sq. ft., about 5,300 sq. ft. less than proposed in the project, for an additional FAR of about 4.4:1. This alternative would contain a total of about 337,600 sq. ft. for an overall FAR of about 18.4:1. There would be one level of retail space and 17 floors of office space. The 19th floor would contain mechanical equipment and an athletic health club. There would be six floors of residential use containing 54 condominiums, three fewer than for the project. Under this alternative there would be two levels of subsurface parking and two loading docks. The impacts of this alternative would generally be similar to those described for the proposed project except that conflicts between pedestrians and vehicles would be reduced by about 25 percent because ramps to the parking garage and loading docks would be on Pine St. where pedestrian traffic is light. Alternative Five has been rejected by the project sponsor because it would not permit two levels of retail use and a double height public gallery connecting Pine and Market Sts. and because it would not provide the amount of bonus floor area for residential use which may be requested with the preferred project design.

Alternative Six is the no project alternative. Should this alternative be implemented, the site conditions and uses will remain the same. Long-term use of the site would be uncommitted. This alternative could result in the development of office space comparable to the project at another location. This alternative has been rejected by the project sponsor because of the firm's association with the City of San Francisco, existing interests in the site and the sponsor's conviction that the project site is a prime location for housing in the City.

II. PROJECT DESCRIPTION

A. PROJECT SPONSOR'S OBJECTIVES

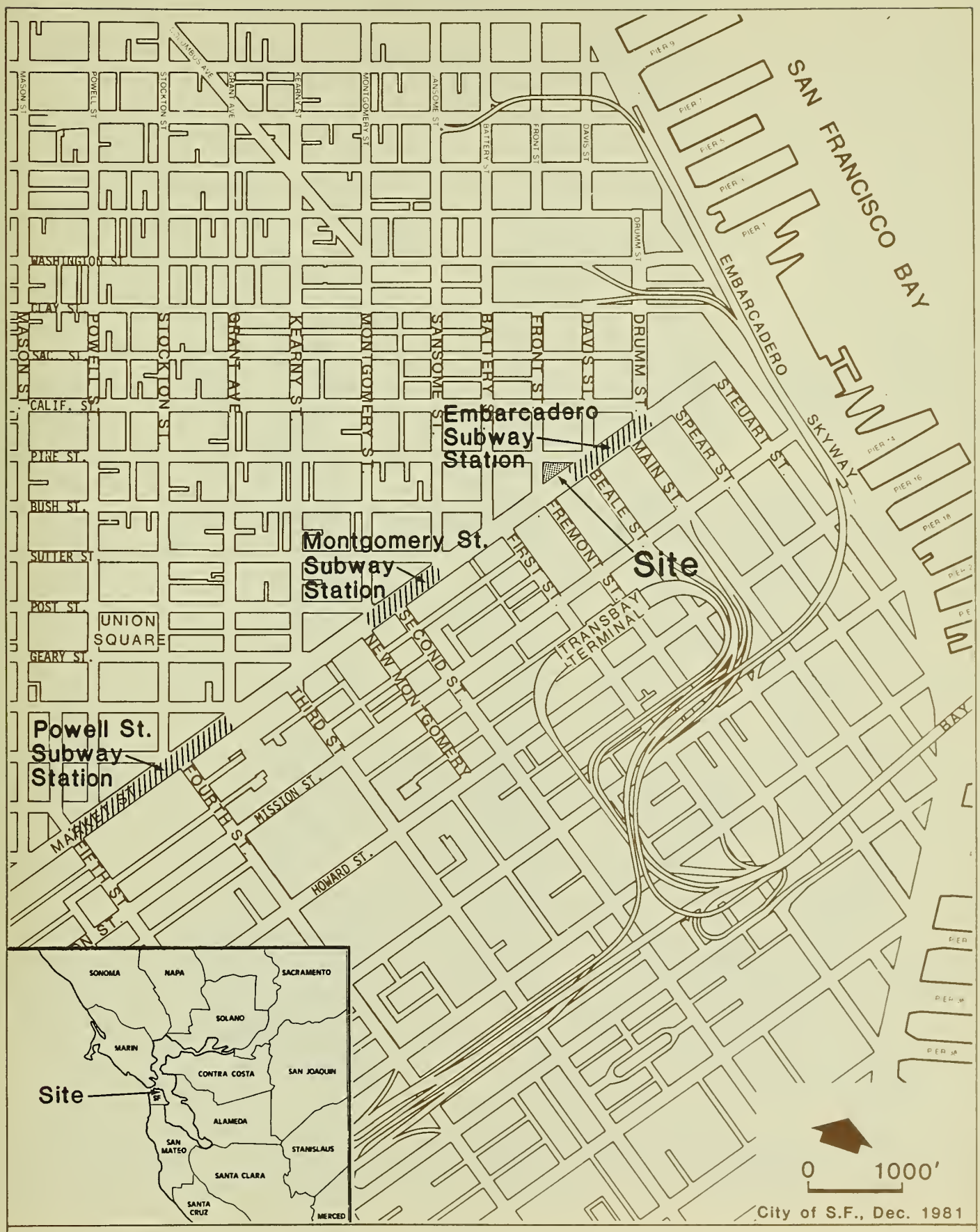
The project sponsor, Honorway Investment Corporation, a California corporation, proposes to construct a 26-story combined office and residential building on Market St. (see Figure 1). The sponsor's objectives are to construct a high-quality commercial office building, increase the City's housing supply by providing on-site housing, and realize a reasonable return on investment. The project is intended to satisfy some of the existing demand for both office space and housing in San Francisco. The project sponsor intends to develop an energy-efficient building which architecturally would complement adjacent high-rise structures. The project architect is Skidmore, Owings and Merrill of San Francisco.

B. PROJECT LOCATION

The 18,360-sq.-ft. project site includes Lots 1 and 2 which comprise Assessor's Block (A/B) 265. This triangular block is bounded by Market, Pine and Front Sts. and is adjacent to the Embarcadero Station of the Market St. subway (see Figure 13, p. 28). It is located within the City's C-3-O (Downtown Office) Planning Code Use district.

C. PROJECT DESCRIPTION

The project would be a 375-ft. high, 26-story building, with about 342,900 gross sq. ft. of floor area, excluding foundation, mechanical and parking space (see Figure 2, p. 11). There would be two levels of subsurface parking containing about 22,300 net sq. ft., and accommodating about 47 passenger vehicles. The parking levels would be accessible by a single lane ramp from Front St. There would be a direct connection from the lower basement level of

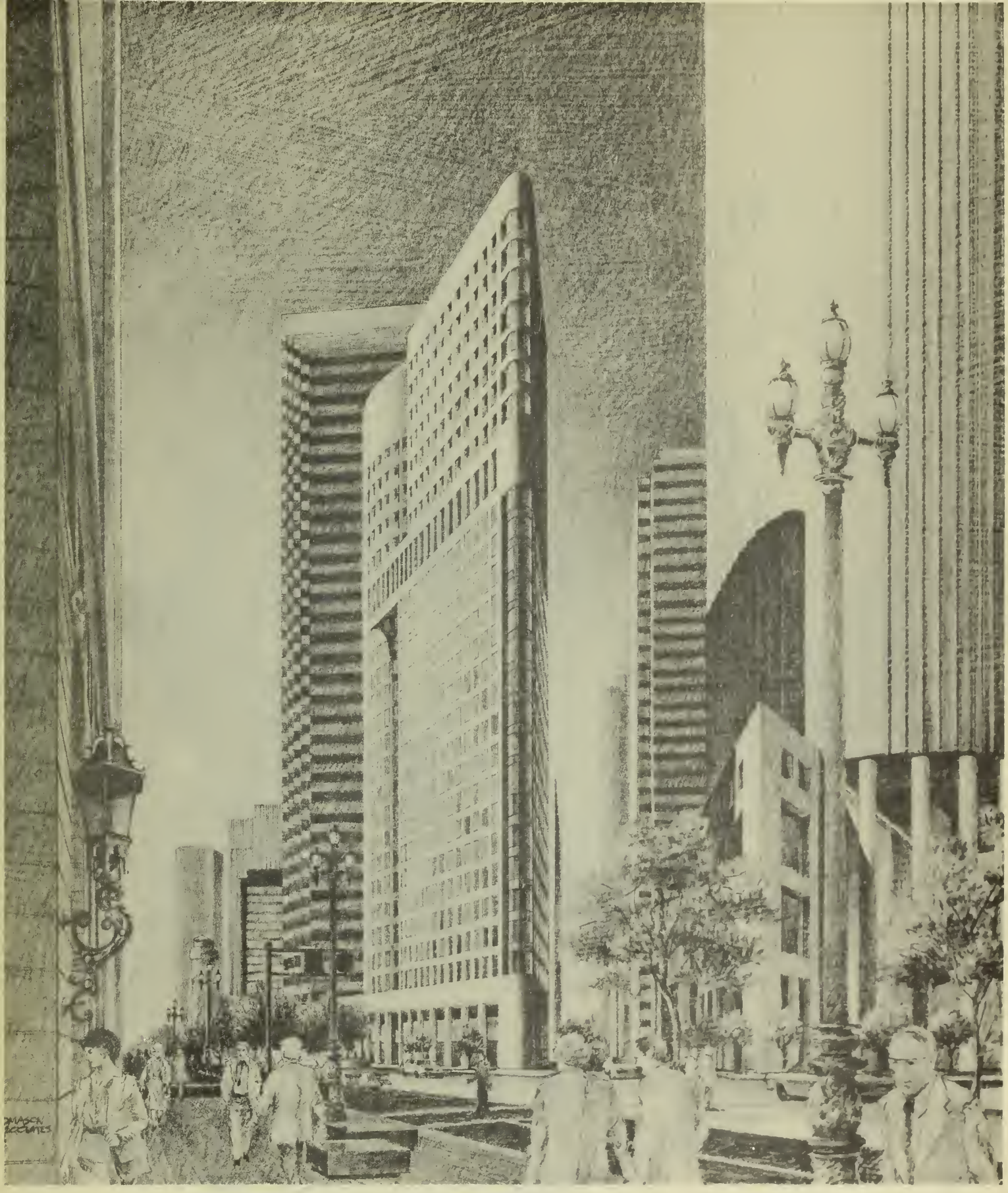


SOURCE: Environmental Science Associates, Inc.

FIGURE 1: Project Location

the project to the mezzanine of the Embarcadero Station of the Market St. subway; access would be provided via shuttle elevators serving the parking facility and first two floors of the building (see Figure 3, p. 12). Two loading docks, accessible from Front St., would be provided at grade. The main building entrances, located on Market and Pine Sts., would be connected by a 25-ft. wide, double-height public gallery, open to the second floor (see Figures 4 and 5, pp. 13 - 14). There would be separate lobby and elevator access to the residential and office portions of the building. Total lobby, elevator and public area on the first two floors would be about 12,500 gross sq. ft. Retail space totaling about 10,000 gross sq. ft. would be located on the first and second levels. The second floor would also include about 9,300 gross sq. ft. of office space.

The third through 18th floors would contain about 225,200 gross sq. ft. of office space. The average gross floor area for the office floors would be about 14,100 sq. ft. (see Figure 6, p. 15). The office, lobby, and retail portions of the building would rise to a height of approximately 248 ft. The 18th floor, containing mechanical equipment and an athletic health club, would be a transition floor between the office and residential portions of the building. The health club, containing about 3,800 sq. ft., would serve as a common facility for residents and employees of the building (see Figure 7, p.16). The seven floors from the 19th through 26th would be occupied by about 57 residential condominium units (see Figure 8, p. 17). About half of the space on the 26th floor would be devoted to mechanical services, resulting in six and a half floors of residential use. Gross floor area for the residential portion of the building would be about 85,900 sq. ft. There would be a rooftop observation deck, containing about 350 sq. ft. (see Figure 9, p. 18). The observation deck, accommodating about 50 persons would be reached via the residential elevators. The observation deck would be opened to the public during normal business hours; access would be monitored and controlled by a security guard at the ground floor. Open space for project residents would be provided by private balconies for individual condominiums, containing a minimum of about 3,400 sq. ft. in total, to satisfy the residential open space requirement of Section 135 of the City Planning Code.



See Note /1/ , p.26, for a discussion of the Rendering perspective

← Project →

FIGURE 2: Rendering of Project from Market Street looking West

SOURCE: Skidmore, Owings and Merrill

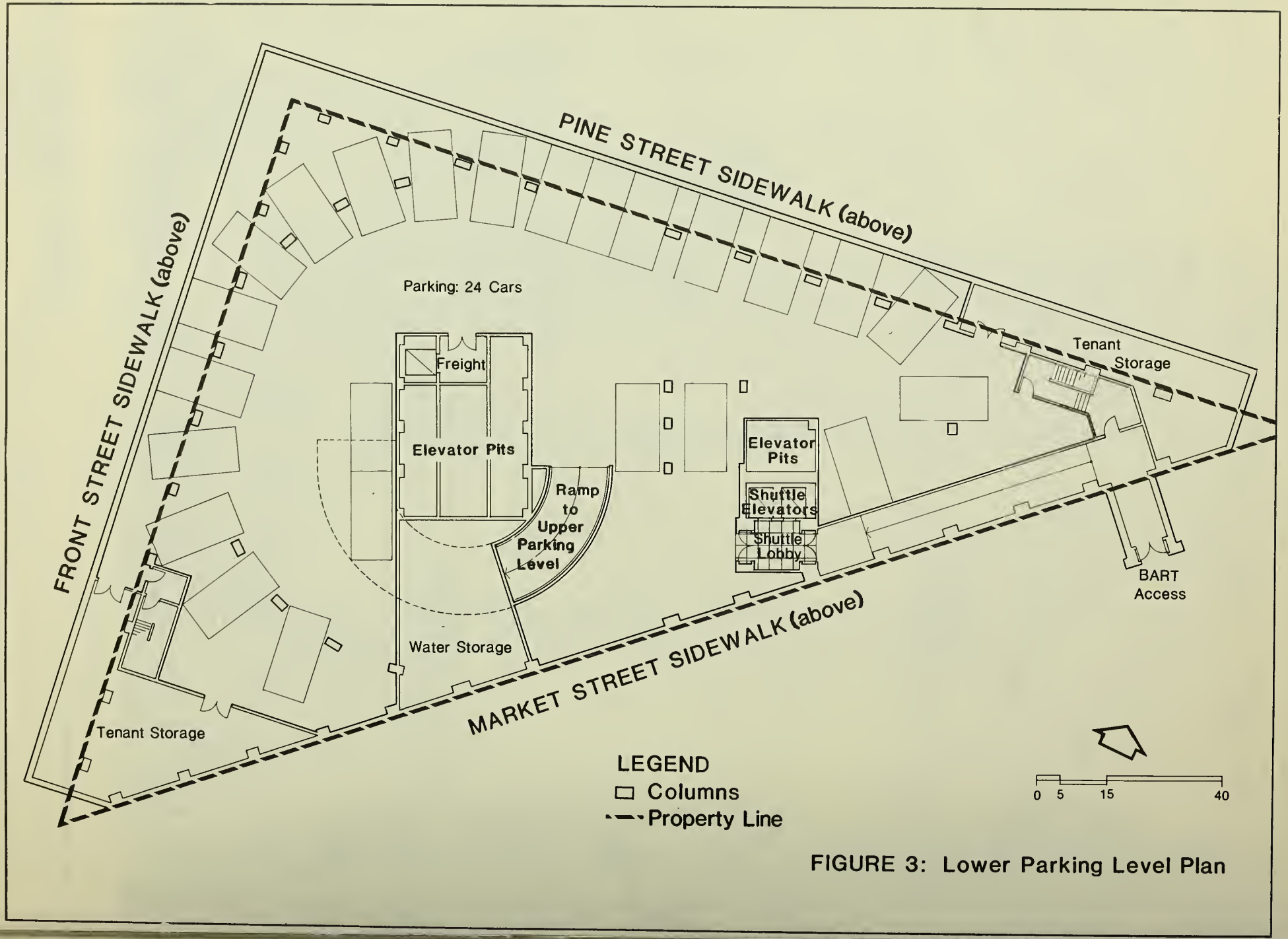


FIGURE 3: Lower Parking Level Plan

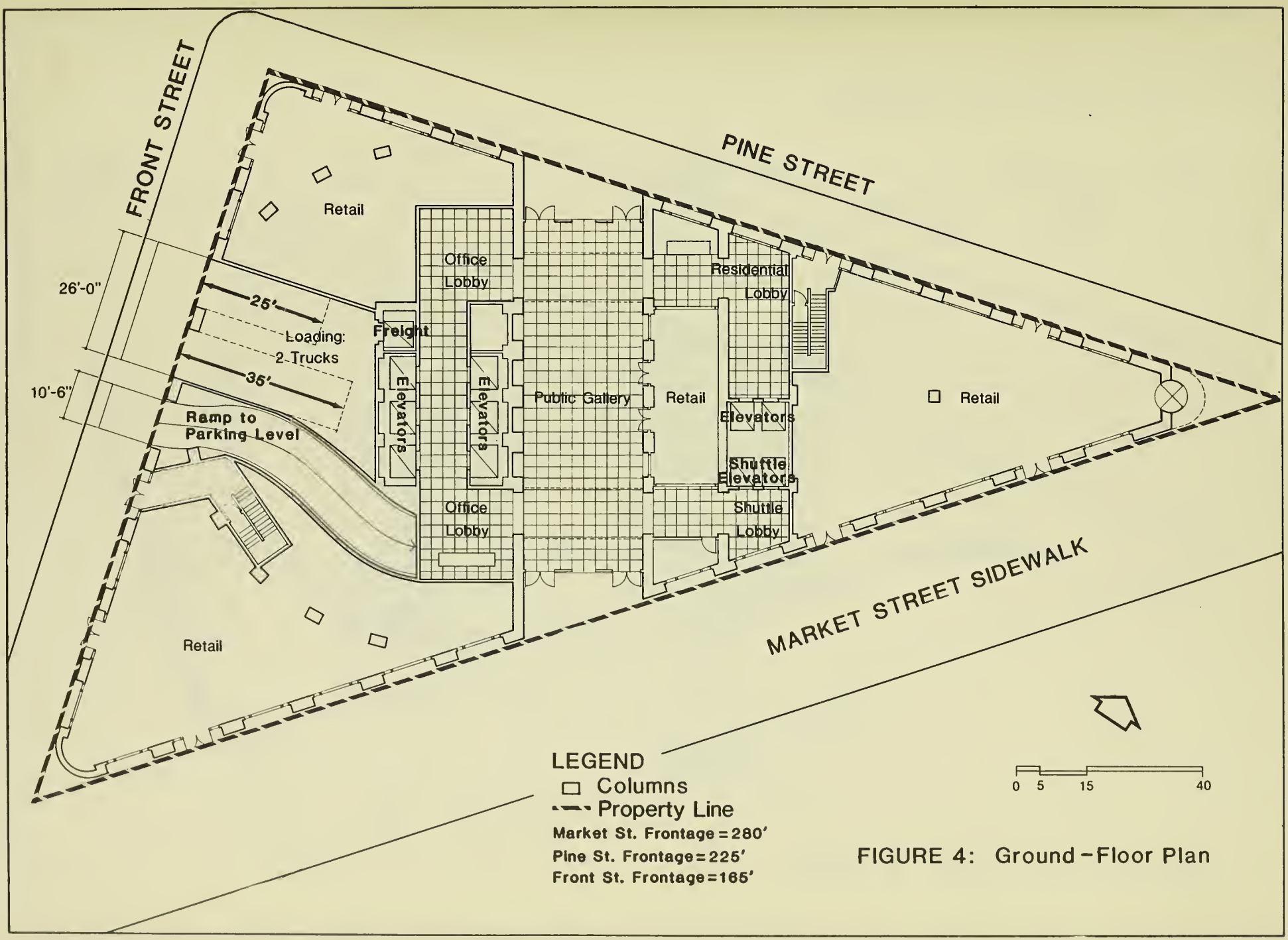


FIGURE 4: Ground-Floor Plan

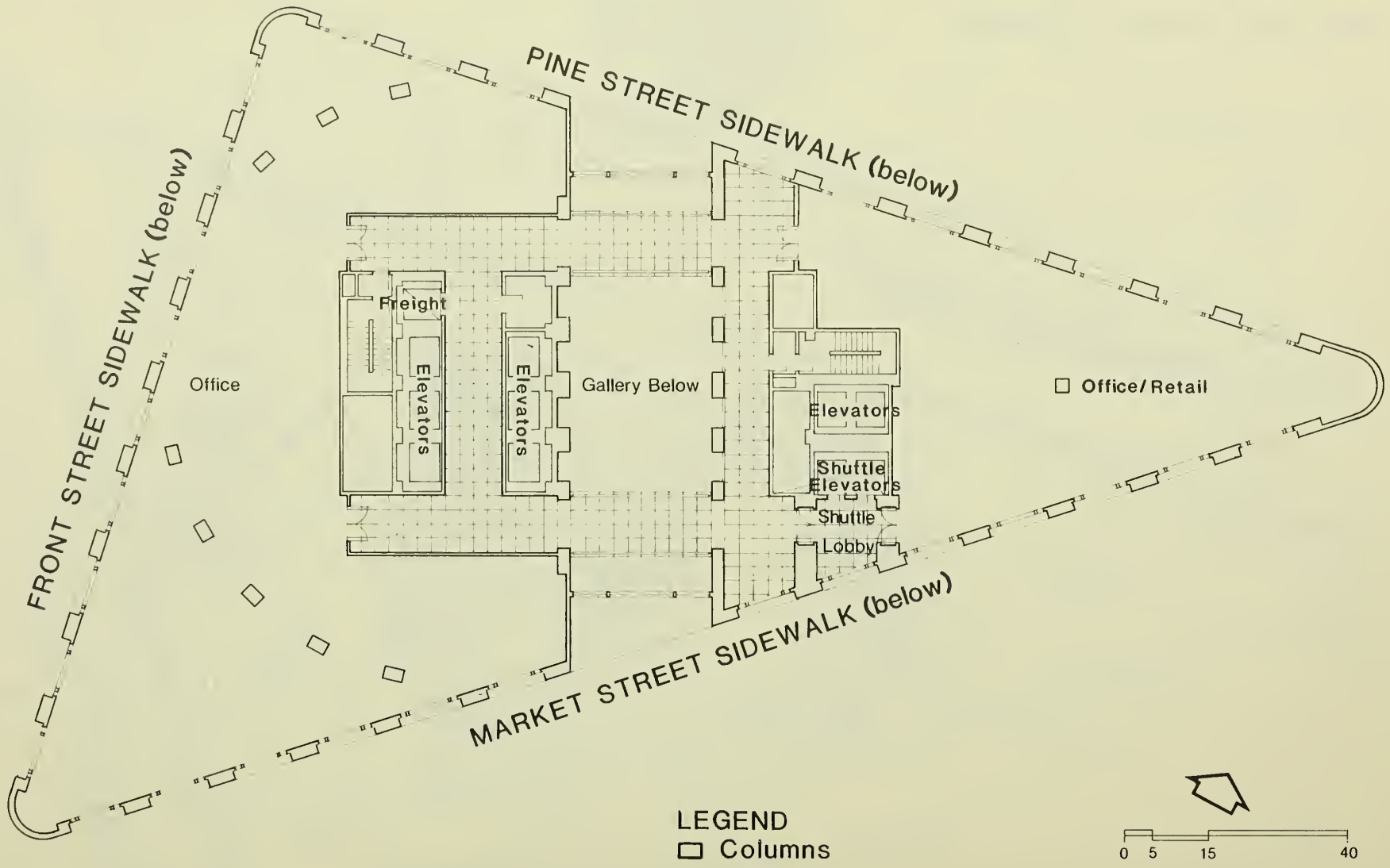


FIGURE 5: Second-Floor Plan

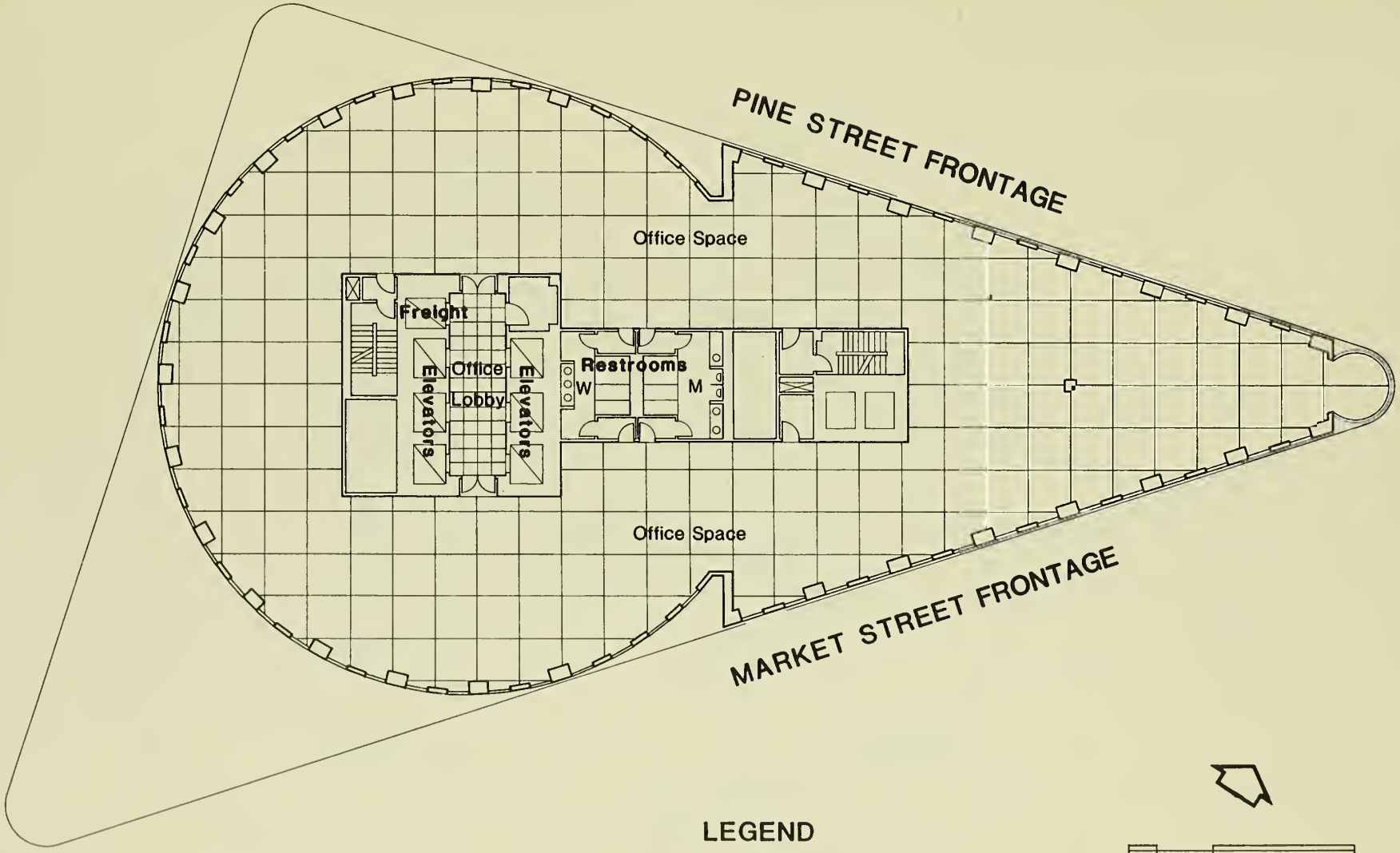
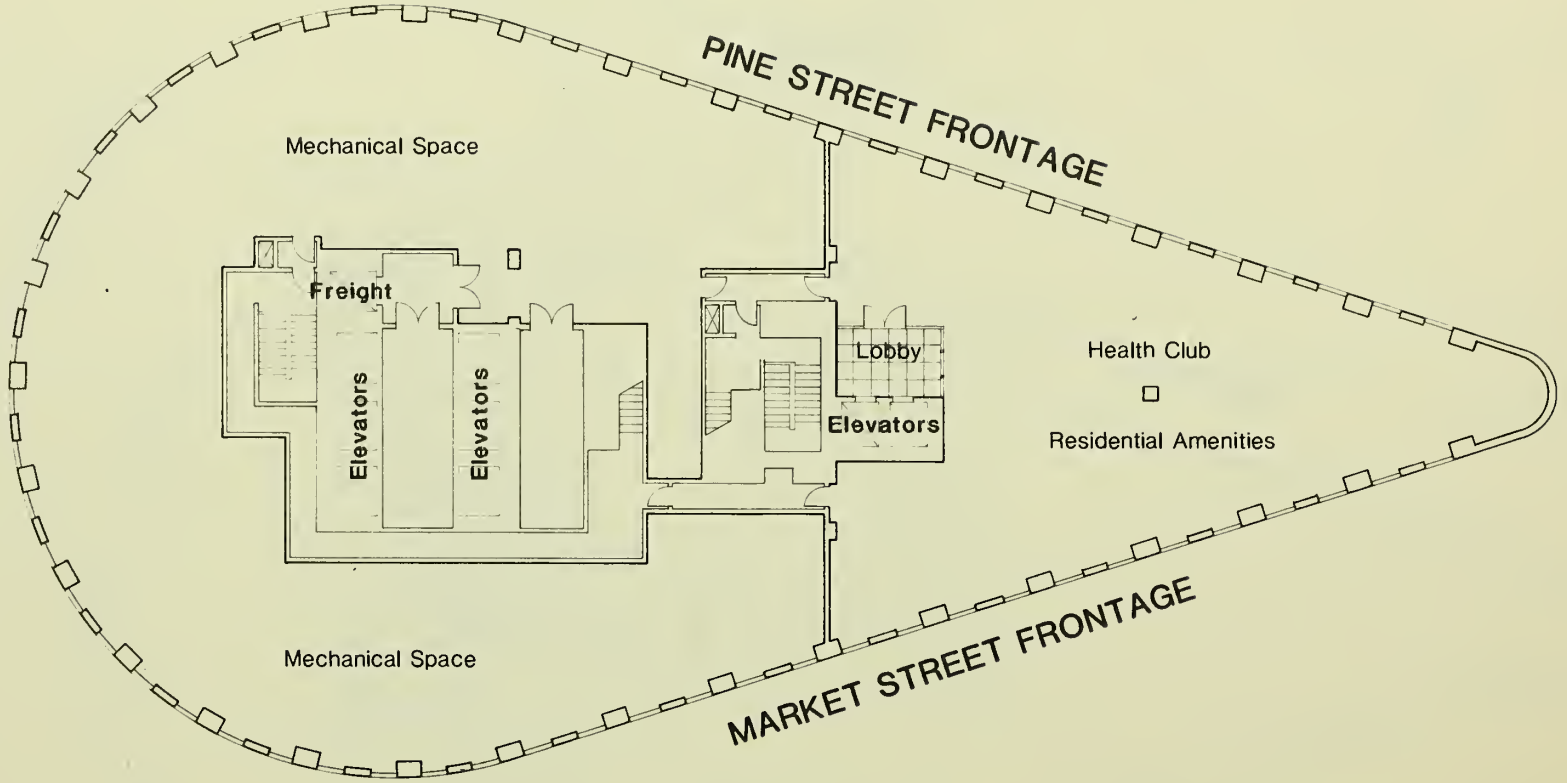


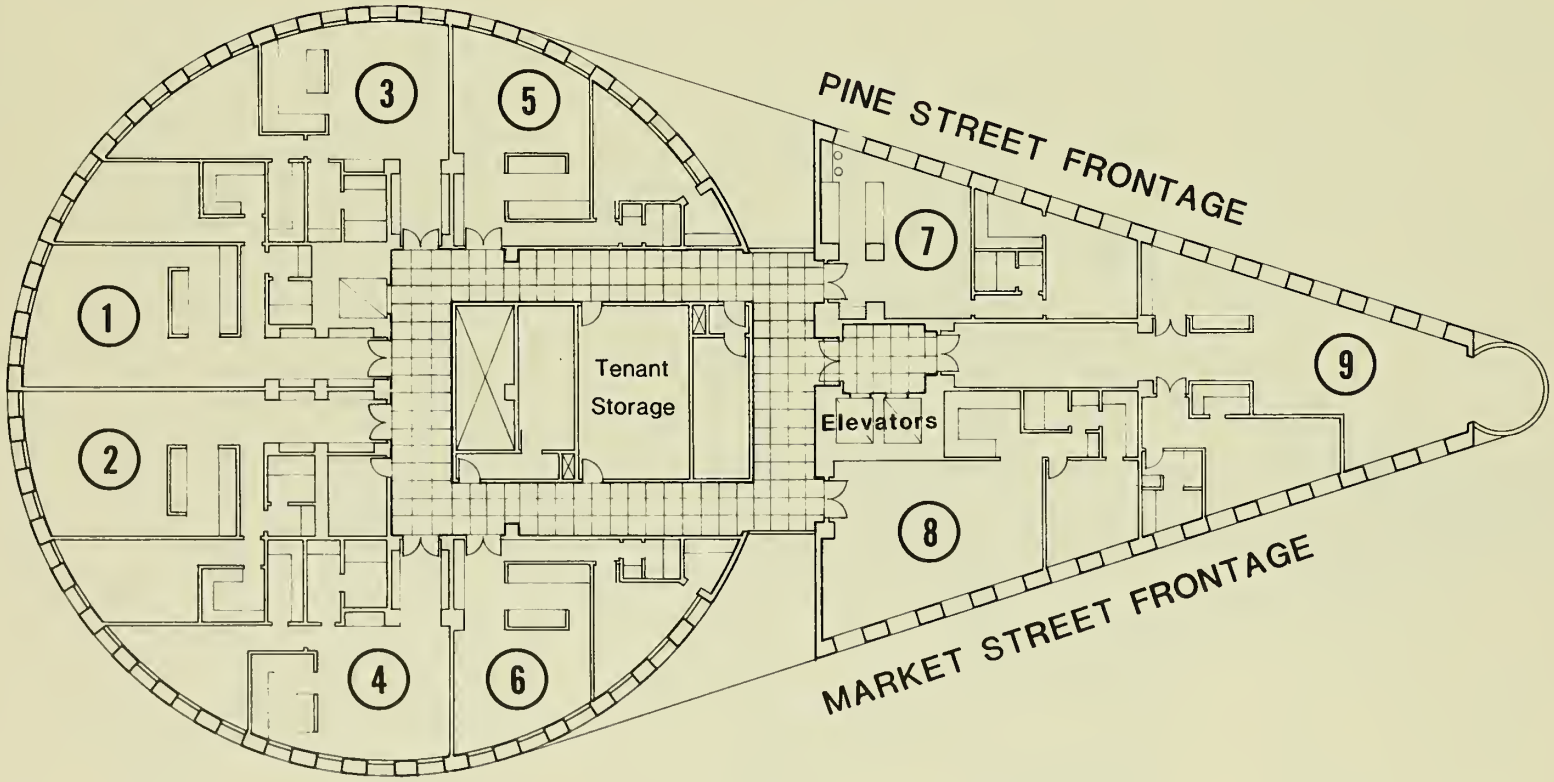
FIGURE 6: Typical Office Floor Plan



LEGEND
Columns

0 5 15 40

FIGURE 7: 19th Floor Plan



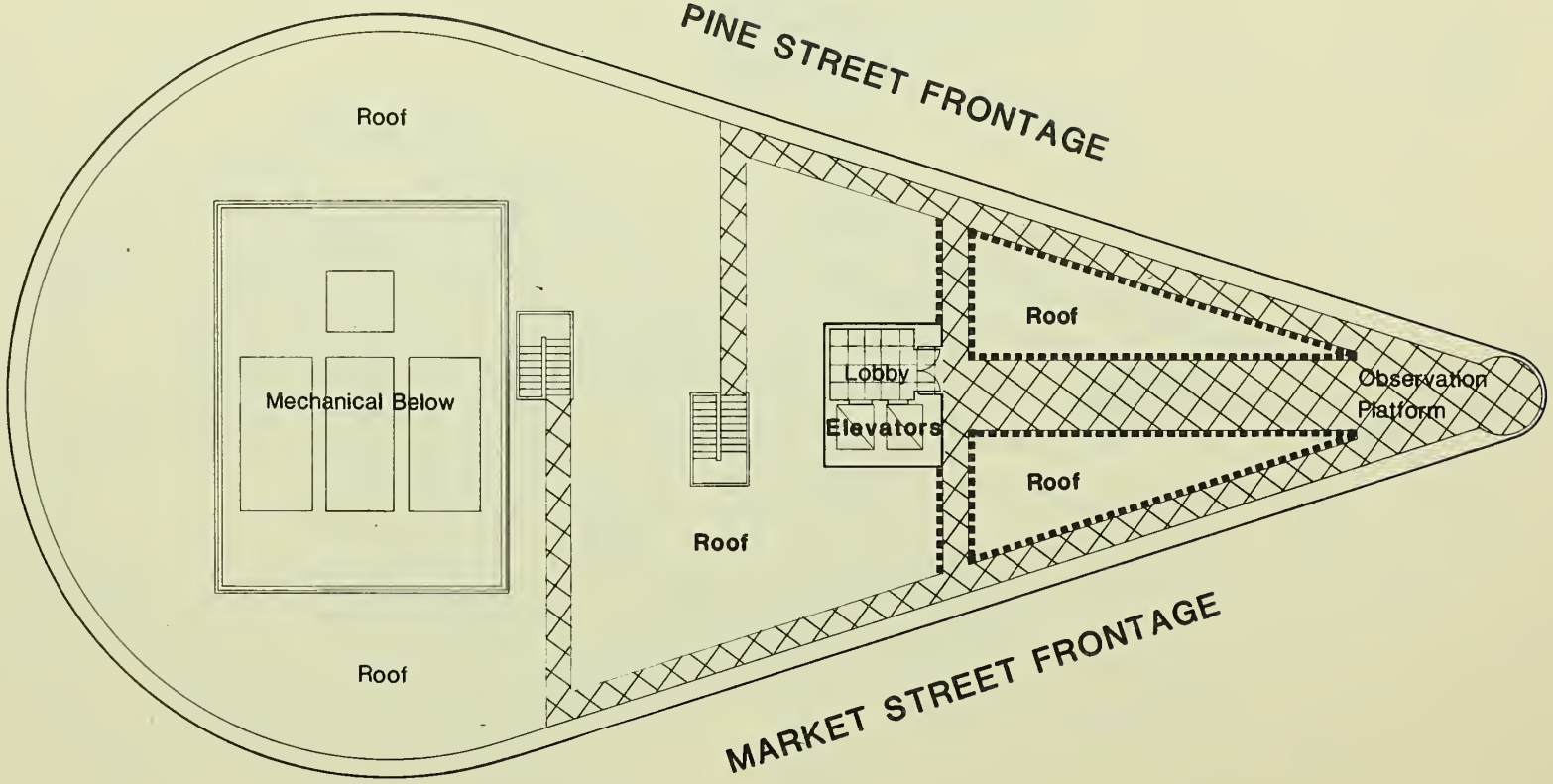
LEGEND

(5) Residential Units

Columns

0 5 15 40

FIGURE 8: Typical Condominium Floor Plan



LEGEND

Public Area

railing

FIGURE 9: Roof Floor Plan

The lower two stories of the building would form a triangular base, 40 ft. in height (see Figures 10 and 11, pp. 20 - 21). The base is intended to provide pedestrian scale on Market St., particularly when viewed from the 333 Market St. Plaza, opposite the site. The setback at 40 ft. would relate to the bases of four structures on the south side of Market St.: the PG&E, Matson, Federal Reserve Bank (under construction) and Southern Pacific buildings. The project base would be rounded at all three corners. The facade of the project would be approximately 35 percent glass and 65 percent granite. Both clear and green-tinted glass are under consideration; the granite treatment and coloration have not yet been determined.

The project tower would be about 375 ft. tall (see Figure 12, p. 22). Above the setback at the 40 ft. level, a rounded, semi-circular frontage would be located along Front St. A recess would be formed in the building tower at the midpoint of both the Market St. and Pine St. facades (see Figures 6 and 8, pp. 15 and 17). The building would narrow approaching the intersection of Pine and Market Sts. with the "prow" oriented towards the foot of Market St. This indentation to extend the circular form is intended by the architect to promote visual interest and reduce building bulk. The proposed building would have a public gallery, widened sidewalks and multiple building entrances. These features are intended to shorten walking distances and improve pedestrian access to work, to retail and residential spaces and to transit facilities. The entry plazas and public gallery would be landscaped.

Gross floor area of the lobby, retail and office space would be approximately 257,000 sq. ft., representing a basic Floor Area Ratio (FAR) of about 14:1. The project plans include about 85,900 gross sq. ft. of housing. The square footage of the proposed residential units would cause the building to exceed the basic FAR, permitted under Section 124 of the City Planning Code, for a structure in the C-3-O District. The total gross floor area for the building would be approximately 342,900 sq. ft. (excluding foundation, mechanical, and parking floor area), representing a total project FAR of about 18.7:1. This would exceed the allowable basic FAR of 14:1 by about 4.7:1, or approximately 85,900 sq. ft.

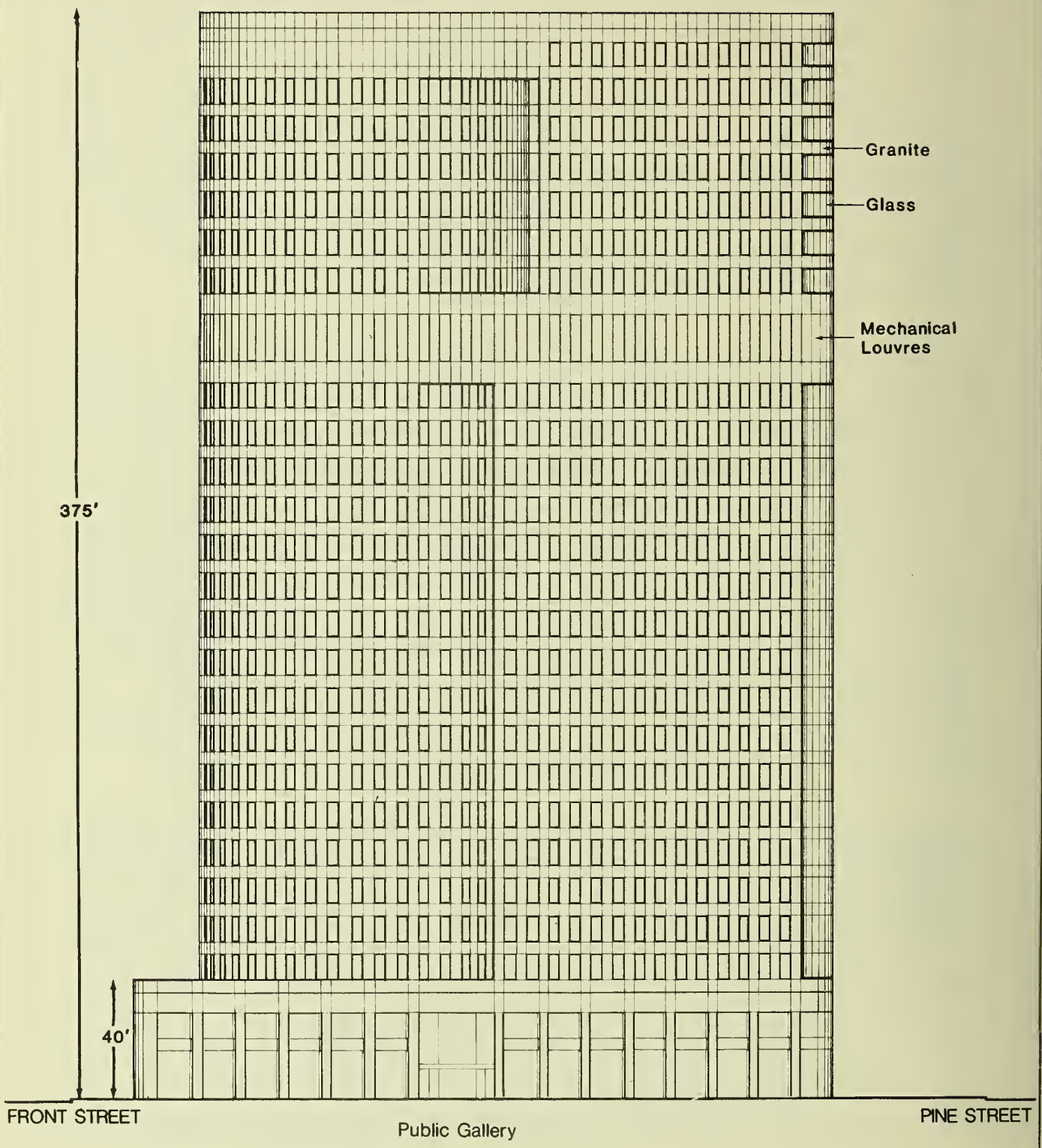


FIGURE 10: Market Street Elevation

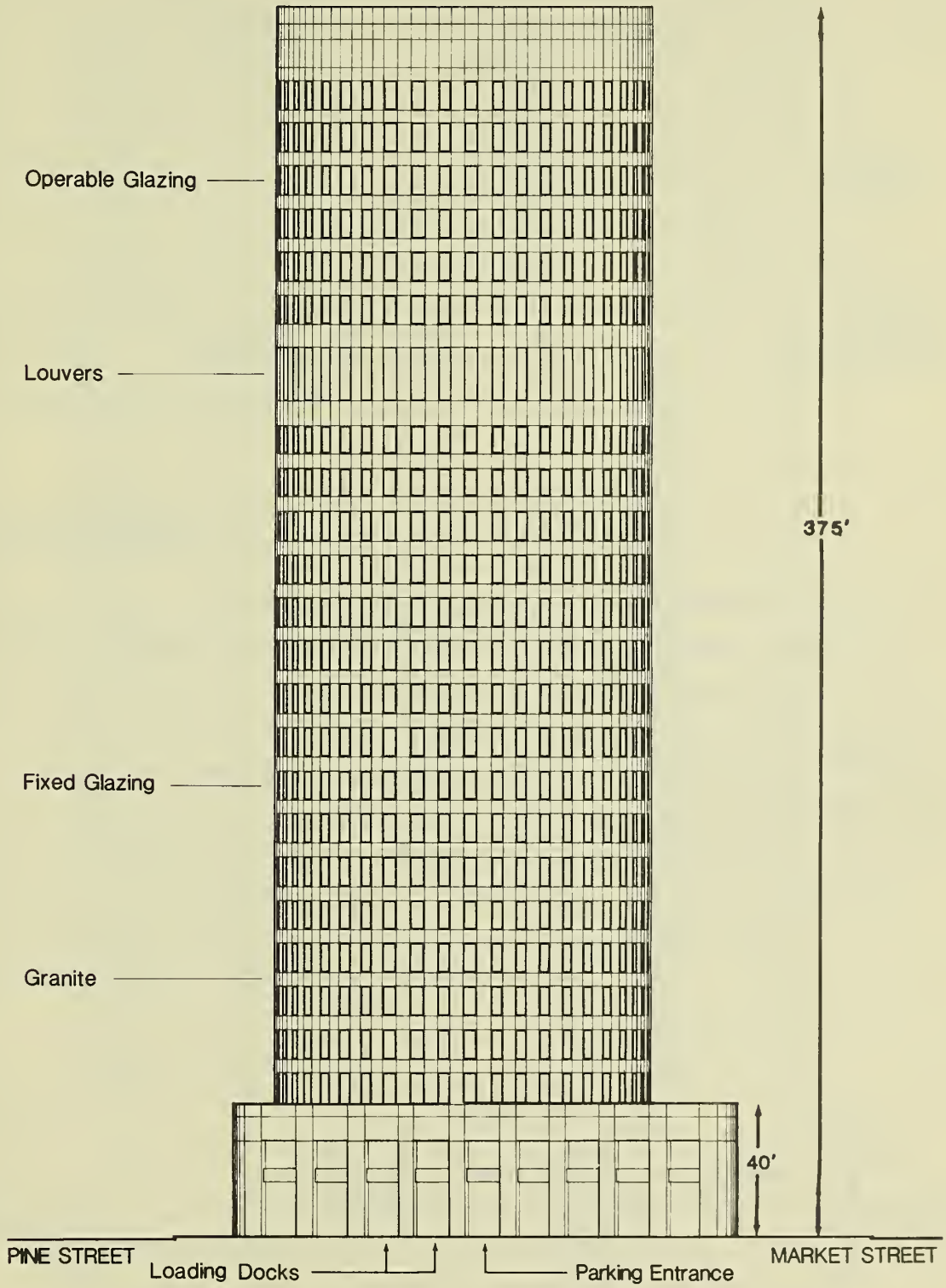
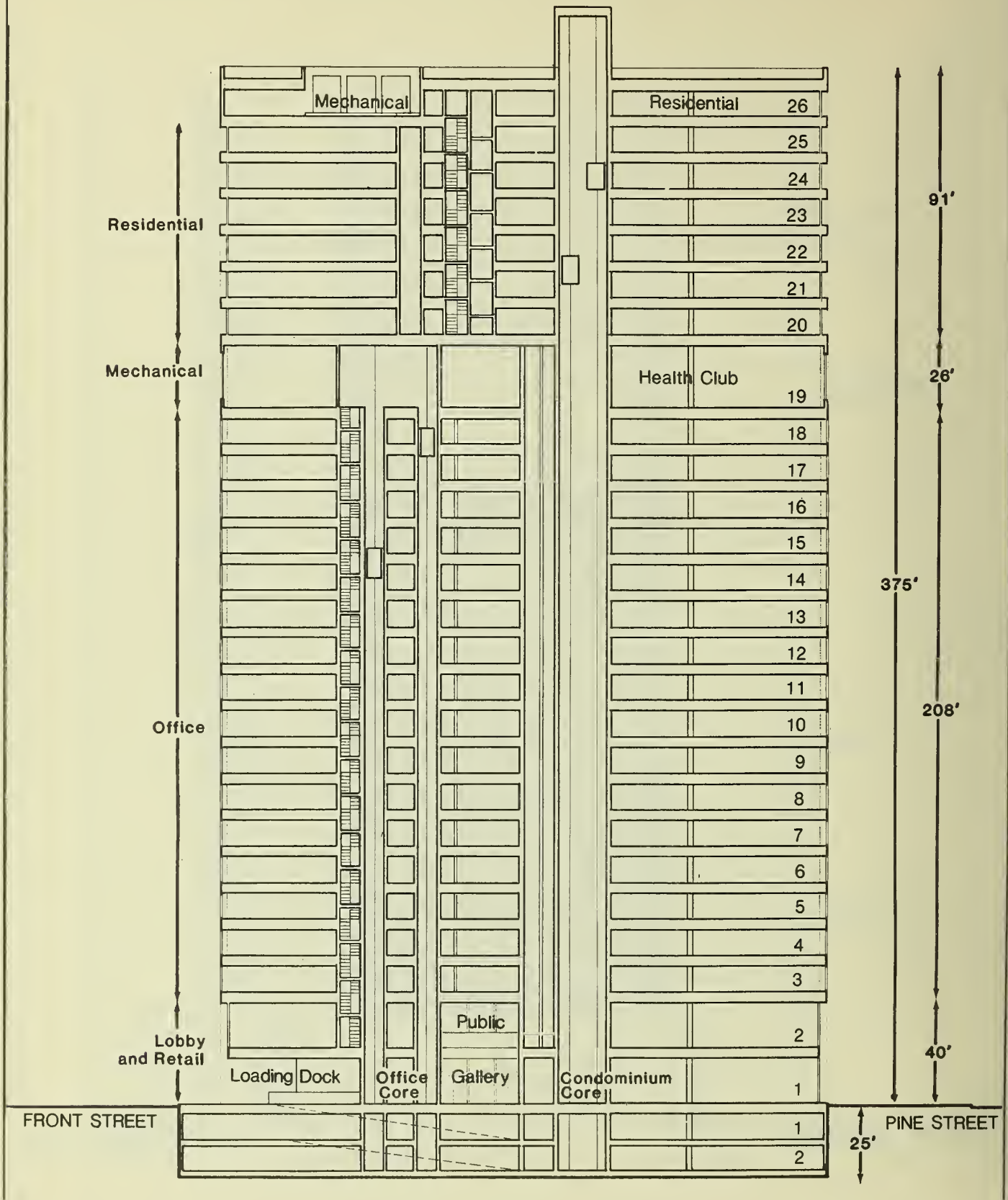


FIGURE 11: Front Street Elevation



LONGITUDINAL SECTION

0 10 30 80

FIGURE 12: Building Section

The use of bonuses, described in Section 126 of the City Planning Code, could permit space in addition to the basic FAR. Permitted bonus space could be used for, and would be limited to, residential uses under the existing Interim Controls on downtown high-rise office development./2/ The project sponsor intends to apply for a Conditional Use authorization for approximately 85,900 sq. ft. of bonus floor area. This bonus space would be based upon provision of rapid transit access, multiple building entrances, shortened walking distances, sidewalk widening, and a rooftop observation deck (see Table 1). Identified bonus space would result in a total gross floor area for the building of about 342,900 sq. ft., an FAR of about 18.7:1. The project proposes a total of 85,900 sq. ft. of residential space, the amount that the identified bonuses would allow.

D. PROJECT OCCUPANCY

The project sponsor proposes to lease approximately 10,000 gross sq. ft. of retail space on two floors, which is expected to accommodate about four tenants. Commercial retail activities would include a combination of uses such as a bank or savings and loan institution, a small restaurant, apparel store, drugstore, and/or office equipment store. Approximately 234,500 gross sq. ft. of office space is expected to be leased. Tenants are expected to be primarily professional service firms and executive departments of financial institutions and other businesses./3/ The sponsor anticipates that most tenant firms would have a larger proportion of management and professional/technical staff than clerical staff.

TABLE 1: PROJECT CHARACTERISTICS

NUMBER OF STORIES*		HEIGHT AND BULK MEASUREMENTS		
			Proposed	Permitted**
Retail	2			
Office	16	Height:	375 ft.	600 ft.
Mechanical	1	Length:	220 ft.	170 ft.
Residential	7	Diagonal:	220 ft.	200 ft.
Total Stories	26			

GROSS FLOOR AREA PROPOSED

Use	sq. ft.
Retail and Lobby	22,500
Office	234,500
Total Commerical	257,000
Residential Units	85,900
Total Project	342,000

REQUESTED BONUS SPACE FOR HOUSING (Section 126 of the City Planning Code and Interim Controls)

Rapid Transit Access	51,400 sq. ft.
Multiple Building Entrances	10,000 sq. ft.
Sidewalk Widening	4,800 sq. ft.
Shortened Walking Distances	9,700 sq. ft.
Observation Deck	10,000 sq. ft.
Total Bonus Floor Area	85,900 sq. ft.

FLOOR AREA CALCULATIONS	Floor Area	FAR
Basic Permitted ***	257,000 sq. ft.	14.0:1
Bonus Space Requested	85,900 sq. ft.	4.7:1
Total Permitted by Code	342,900 sq. ft.	18.7:1
Proposed Project	342,900 sq. ft.	18.7:1

*excluding two levels of subsurface parking, containing about 40 spaces
**Section 270 of the City Planning Code
***Section 124 of the City Planning Code
SOURCE: Environmental Science Associates, Inc.

E. PROJECT SCHEDULE, COST AND APPROVAL REQUIREMENTS

PROJECT SCHEDULE

Detailed project design is scheduled by the sponsor for completion in late 1982. Demolition and site clearance are anticipated to require approximately two months; excavation one month; foundation preparation three months; steel erection six months; and exterior and interior finishing eight months. Interior finishing would be completed within 20 months from the initiation of project construction./4/ Initial project occupancy is scheduled for late 1984, with full occupancy expected in early 1985.

COST

Project development costs would be about $66.4 million in 1981 dollars, including $12 million for land, $1.4 million for design, engineering and environmental review, $37 million for basic construction, $5 million for interior finishing and $11 million for interim financing and miscellaneous costs. Retail space on the ground floor and second floor is expected to rent for approximately $42 and $35 per sq. ft. per year, respectively. Office space is expected to rent for about $22 per sq. ft. per year. Residential units are expected to sell for about $200 per sq. ft., or from about $225,000 to $275,000 in 1981 dollars./5/

APPROVAL REQUIREMENTS

Under its policy of Discretionary Review of all downtown high-rise buildings during the period of Interim Controls on the use of floor area bonuses, the City Planning Commission would review, per its Resolution 8474 adopted January 17, 1980, the building design and its environmental context in detail. After a public hearing the Commission would adopt a resolution approving, approving with conditions, or disapproving the project./2/ The project would require a variance from the residential rear yard requirement of Section 134 of the City Planning Code. A Conditional Use authorization would be required by the Interim Controls to permit the use of bonus floor area for residential use on the site. Following project approval by the City Planning

Commission, the project sponsor would obtain demolition, building, and related permits from the Central Permit Bureau of the Department of Public Works. A revocable encroachment permit, to allow subsurface parking beneath the Pine St. and Front St. sidewalks, would be applied for with the building permit. The Departments of City Planning and Public Works would make a recommendation to the Board of Supervisors who would then hold a public hearing on the encroachment permit application. The revocable encroachment permit would require final approval from the Board of Supervisors. Under the State Subdivision Map Act and the City Subdivision Code, preparation and approval of a subdivsion map would be required for the proposed residential development.

NOTES - Project Description

/1/ In order to present the proposed building (and Alternative One) in the context of surrounding buildings without making it too far away from the observer, the Figure 2 Rendering on p. 11 (and Figure 29 on p. 135) have a wide angle. To compensate for a perceived wide angle "distortion" in the rendering, the artist has placed vanishing points such that a more horizontial cornice line is produced than if they were drawn technically accurate. Figures 19 and 20, pp. 62 - 63, which are photographs, have accurate perspectives.

/2/ City Planning Commission Resolution No. 8474, January 17, 1980. Board of Supervisors Ordinance 240-80, June 1, 1980, established the interim limitations on use of bonuses in effect until July 1, 1981. This ordinance was extended, in June 1981, until September 1, 1981 and, subsequently, by Ordinance 34-82, until March 1, 1983.

/3/ John A. Cecconi, Coldwell Banker - Commericial Real Estate Services, letter communication, October 30, 1981.

/4/ Alan Rudy, Project Architect, Skidmore, Owings and Merrill, oral communication, October 7, 1981.

/5/ Kwan So, Honorway Investment Corporation, written communication, October 6, 1981.

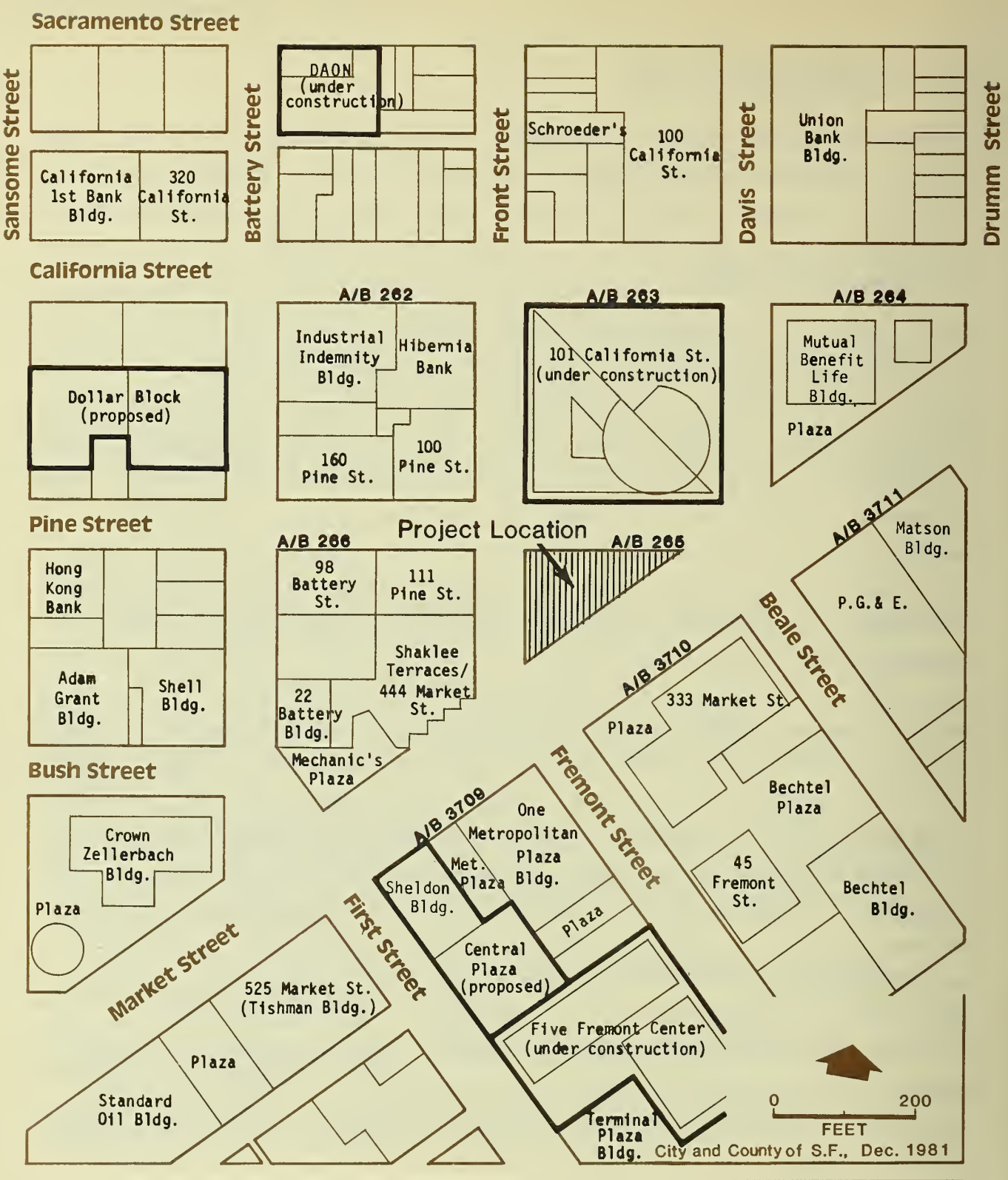
III. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

The project site is on Assessor's Block (A/B) 265, is triangular in shape, and is bounded by Market, Pine and Front Sts. The site contains about 18,360 sq. ft. and is presently occupied by two structures, both owned by the project sponsor. The nine-story (112 ft. tall) building at 320 Market St. has a drugstore at the ground level and eight floors of office space above. The eight-story (97 ft. tall) 340 Market St. building contains a subsurface parking garage, a savings bank and men's clothing store on the ground level, and seven floors of office space. The primary office tenants of the 320 and 340 Market St. buildings are Standard Oil of California and Levi Strauss Company, respectively.

North of the site (A/B 263), 101 California St., which will include a 48-story cylindrical office tower, is currently under construction (see Figure 13). The block northeast of the site (A/B 264) includes the 32-story Mutual Benefit Life Building and a freestanding two-story Crocker Bank branch. West of the site (A/B 266), are Mechanics Memorial Plaza at Market and Battery Sts.; 444 Market St., a 38-story office structure; a four-level parking structure on Battery St.; mixed office and retail buildings at 111 Pine St. (19 stories) and 22 Battery St. (11 stories); and 98 Battery St., a five-story structure at the corner of Pine and Battery Sts. Northwest of the site (A/B 262) are the 33-story, 100 Pine St. building; the 14-story Industrial Indemnity Company Building at California and Battery Sts.; 160 Pine St., a seven-story office structure at Pine and Battery Sts.; and the 17-story 201 California building (Hibernia Bank).

South of Market St., opposite the site (A/B 3710), are 333 Market St., a 33-floor office building with a five-story annex, and two office towers owned by the Bechtel Corp., 50 Beale St. containing 23 stories and 45 Fremont St. containing 34 stories. East of the project site, between Main and Beale Sts.



Legend

Project Location

Sites Under Development

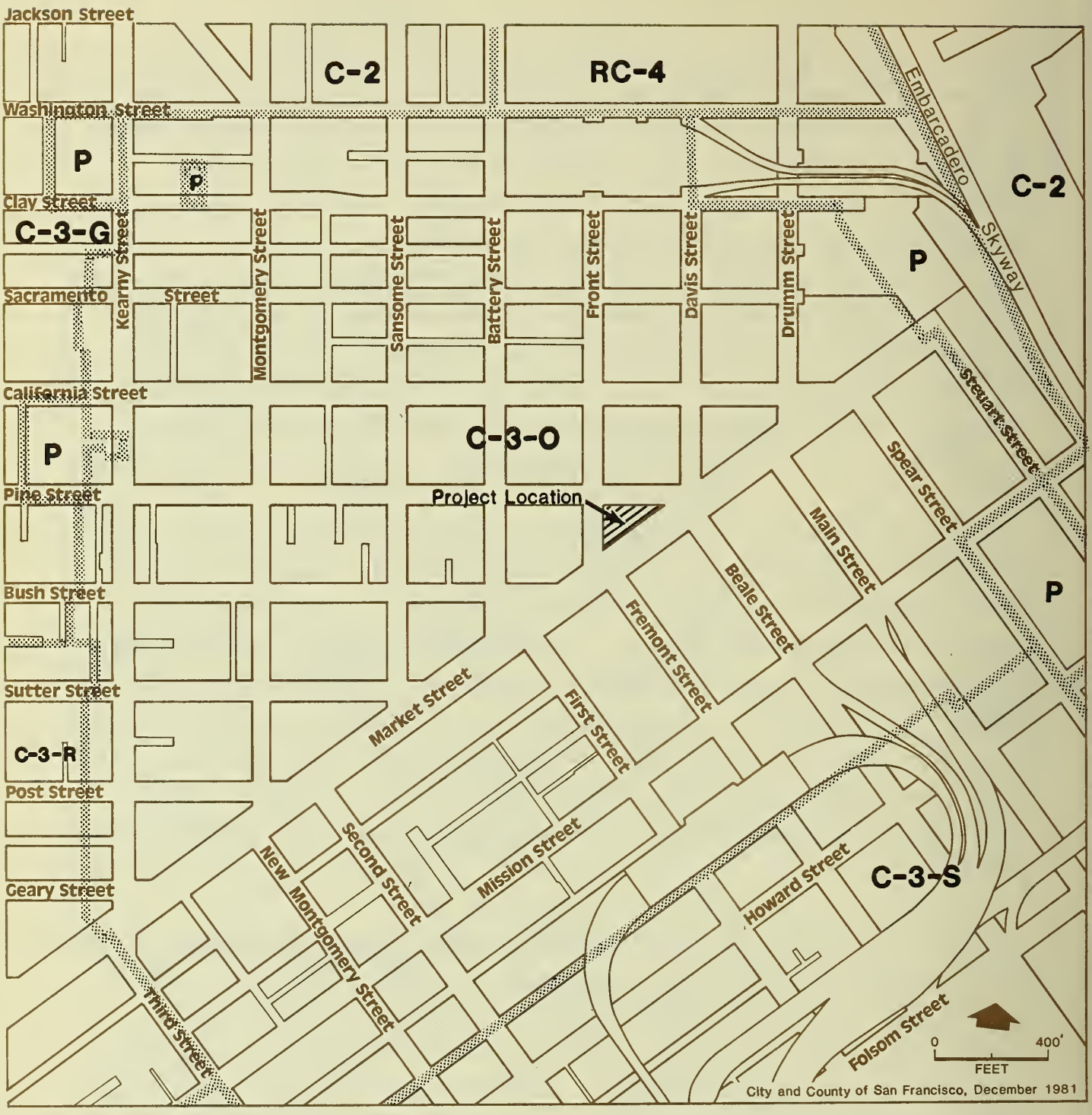
FIGURE 13: Project Site and Vicinity

SOURCE: Environmental Science Associates, Inc.

(A/B 3711), are the Matson and Pacific Gas and Electric (PG&E) buildings, at 215 and 245 Market St., respectively. Both of these structures are rated "A" in the survey conducted for the Foundation for San Francisco's Architectural Heritage and are included in the City's list of Architecturally and/or Historically Significant Buildings in the Downtown. A parking garage is located at 50 Main St., and a 32-story PG&E building is located at 77 Beale St. On the block southwest of the project site (A/B 3709) is One Metropolitan Plaza, a 36-story office structure; the Sheldon Building at 915 First St., which is rated "B" in the Heritage survey and included in the City's list of Architecturally and/or Historically Significant Buildings in the Downtown; a five-story office building and two vacant six story buildings on First St.; and the site of the 42-story Five Fremont Center, presently under construction.

The following projects are either proposed, approved, or under construction within three blocks of the project site (see Figure D4, Appendix D, p. 226) and are scheduled to be completed by the end of 1984: 101 California St., Federal Reserve Bank, 150 Spear St., Four Embarcadero Center, Daon at Battery and Sacramento Sts., Pacific Gateway, 1 Sansome St., 5 Fremont Center, 101 Mission St., 25 Jessie St., Spear and Main Sts., 135 Main St., First and Market Sts., and 333 California St. These developments, upon full build-out, would provide about 6,900,000 sq. ft. of office space, 258,000 sq. ft. of retail floor space, 100,000 sq. ft. of residential floor area, and 880 parking spaces.

The City Planning Code Use classification for the site and surrounding area is C-3-O, Downtown Office District (see Figure 14). Office and retail uses are permitted in this district with a basic Floor Area Ratio (FAR) of 14:1 (Section 124, City Planning Code); that is, a building may have a floor area up to 14 times the area of its site. Under the Interim Controls on downtown high-rise office development imposed by Municipal Ordinance No. 240-80, effective July 1, 1980, bonus space is not permitted for office development, but may be applied to residential uses. Housing is permitted in the C-3-O district at the maximum allowable rate of one dwelling unit per 125 sq. ft. of lot area (Section 215 (a), City Planning Code).



Legend

	Use District Boundaries
	Project Location
C-2	Community Business District
C-3-G	Downtown General Commercial District
C-3-O	Downtown Office District
C-3-R	Downtown Retail District
C-3-S	Downtown Support District
RC-4	Residential-Commercial Combined Districts, High Density
P	Public Use District

SOURCE: San Francisco Planning Code and the Zoning Maps incorporated per Code Section 106

FIGURE 14: Planning Code Use Districts

The project site is in the 600-I Height and Bulk District (see Figure 15). The maximum permitted building height is 600 ft., the maximum permitted facade width above 150 ft. is 170 ft., and the maximum horizontal diagonal dimension above 150 ft. is 200 ft.

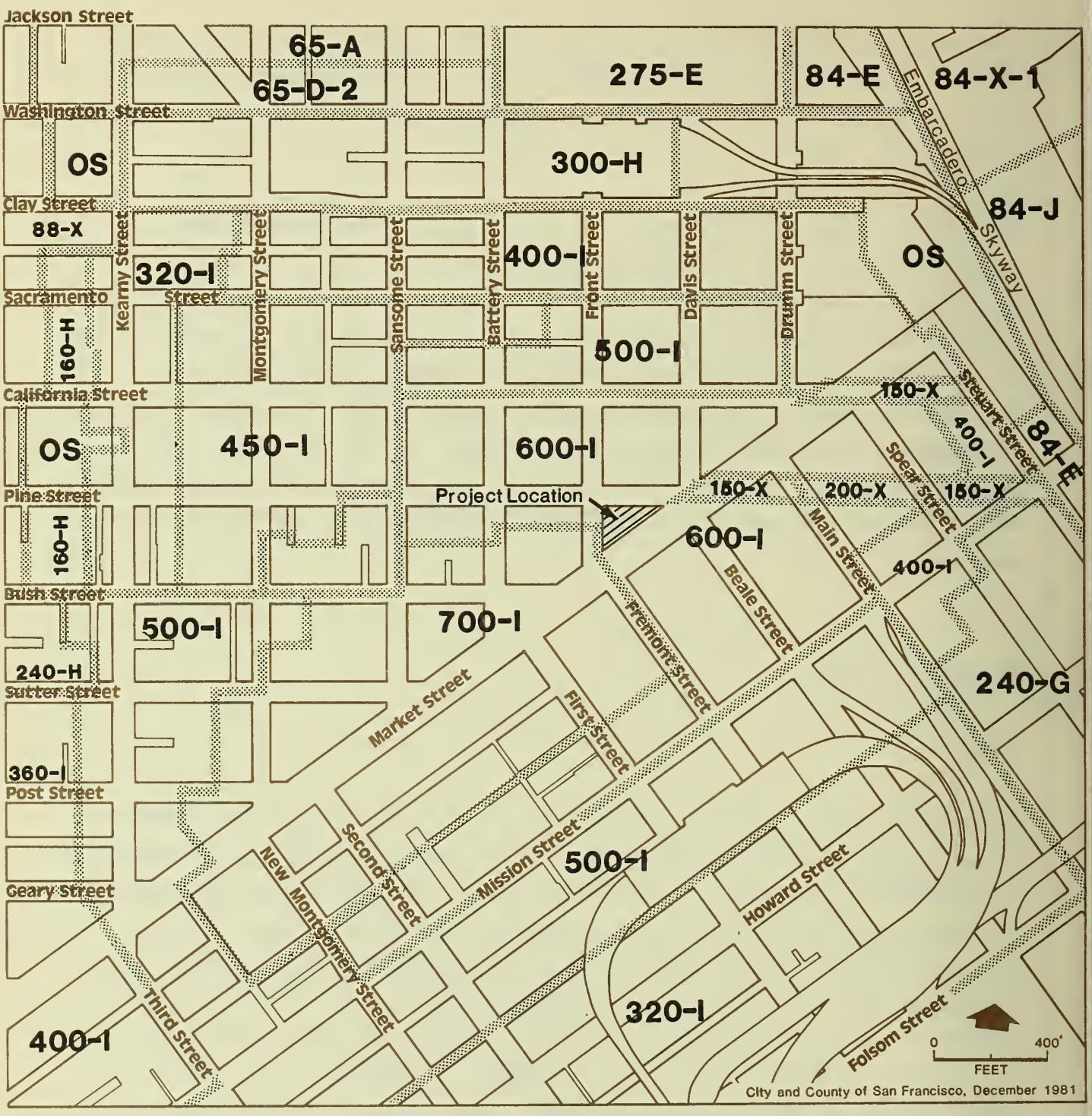
According to Section 151 of the City Planning Code, one parking space is required for each four dwelling units provided in the C-3 zoning district. No off-street parking is required by the Code for commercial uses in the C-3 district but, according to Section 204.5 (c) of the Code, up to seven percent of the gross floor area of a building may be devoted to parking as an accessory use when no parking is required. Section 152 of the Code provides a schedule of required off-street loading spaces for retail, office and residential uses. On January 21, 1982, the City Planning Commission adopted Resolution No. 9286 which includes revised guidelines for off-street loading requirements.

B. URBAN DESIGN

VISUAL

The project site is located on Market St. in the City's Financial District. There are street trees along Market St. The site is occupied by two buildings constructed in the 1950's. The facades of both structures are characterized by alternating rows of clear glass and stone, which produce well defined horizontal building lines and provide a visual pattern. The structure at 320 Market St. is about 112 ft. in height; 340 Market St. is about 97 ft. in height. These two structures essentially fill out the entire site block with a triangular building; there are no setbacks, pedestrian plazas, or architectural design features to promote visual interest (see Figures 16 and 17, pp. 34 and 35). The relatively low height of the existing buildings provide street-level scale and visual relief from adjacent high-rise buildings.

The general area surrounding the project block contains tall, large, modern buildings which dominate views in the site vicinity and contribute to the Financial District's character as a center for office development. The site



Legend

HEIGHT AND BULK DISTRICTS	HEIGHT LIMIT	HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY	MAXIMUM BLDG. LENGTH	MAXIMUM DIAGONAL DIMENSION
700-I	700 FT.	150 FT.	170 FT.	200 FT.
600-I	600	150	170	200
500-I	500	150	170	200
450-I	450	150	170	200
400-I	400	150	170	200
360-I	360	150	170	200
320-I	320	150	170	200
300-H	300	100	170	200
275-E	275	65	110	200
240-G	240	80	170	200
240-H	240	100	170	200
200-X	200	Bulk limit not applicable.		
160-H	160	100	170	200
150-X	150	Bulk limit not applicable.		
88-X	88	Bulk limit not applicable.		
84-X-1	84	Bulk limit not applicable.		
84-J	84	40	250	300
84-E	84	65	110	140
65-D-2	65	40	110	140
65-A	65	40	110	125
OS	Conformity with objectives, principals, and policies of the Master Plan.			

Height and Bulk District Boundaries

Project Location

SOURCE: San Francisco Planning Code and the Zoning Maps Incorporated per Code Section 106

FIGURE 15: Planning Code Height and Bulk Districts

represents a remnant of older middle-rise structures in the Downtown. Older medium-rise buildings in the site vicinity include the PG&E, Matson, and Sheldon buildings on the south side of Market St. With these exceptions, the parcels adjacent to the site have been, or are being, developed with modern high-rise buildings. High-rise structures surrounding the site include the Mutual Benefit Building (32 stories), 100 and 111 Pine St. (33 and 19 stories, respectively), 444 Market St. (38 stories), 333 Market St. (33 stories), and One Metropolitian Plaza (36 stories). The 101 California St. building will contain 48 stories and rise to a height of about 600 ft. upon completion. Construction activities at the 101 California St. site are presently a visual attraction from nearby locations.

From the existing buildings on the site, views are generally short-range, confined to the nearby buildings and street segments. Long-range pedestrian views are available along Pine and Market Sts. from sidewalks on the site. There are no scenic vistas of the City or the Bay available from the project site.

Views of the site are available from buildings and streets in the vicinity. Generally, views extend beyond the site buildings to neighboring high-rise structures. The project site is not visible from long-range view points, in any direction, due to intervening structures

SHADOW

Light and shadow patterns on streets and sidewalks in the project vicinity are cast primarily by nearby high-rise structures. The buildings producing major shadows in the area include 444 Market St., One Metropolitan Plaza and 333 Market St. (see Figures 21 - 23, pp. 69 - 71). Shadows from the existing structures on the project site are generally confined to nearby street segments, the lower portions of adajacent buildings and the 101 California St. construction site. For purposes of clarity, the shadow diagrams presented on pp. 69 - 71 show existing shadows only for the buildings immediately surrounding the project. Shadow patterns from these buildings are typical of the many high-rise buildings in the area and show that most sections of downtown sidewalks are in shade for about half of each day, throughout the year.

444 Market St.

340 Market St.

320 Market St.

FIGURE 16: View of Site – Market St. Frontage

SOURCE: Environmental Science Associates, Inc.

FIGURE 17: View from Market and Beale Sts.

WIND

Wind conditions in San Francisco are a determinant of pedestrian comfort on sidewalks and in other public areas. In downtown areas, flat-walled buildings can funnel wind flows into narrow areas, increase air turbulence, and divert winds downward to street level.

West, southwest, and northwest winds are the most frequent and strongest winds during all seasons in San Francisco./1/ (In meteorology, a west wind blows from the west.) The most frequent wind direction during most months is west; on an annual aggregate basis, west winds blow nearly half of the time. West winds are also the strongest, averaging over seven miles per hour year-round. Southwest winds are typically the second most frequent and second strongest winds. Northwest winds have had the second highest average speed during some years.

Average wind speeds are highest during the summer and lowest during the winter. However, the strongest peak winds occur during the winter, when average speeds for one hour of 27 miles per hour or more have been recorded. The highest average wind speeds are in the mid-afternoon, and the lowest are in the early morning. Peak winds are distributed evenly throughout the day.

NOTE - Urban Design

/1/ This discussion of wind speeds and directions is based on: (1) U.S. Weather Bureau data, collected at 460 California St. near Montgomery St., about three blocks northwest of the site, and (2) Bay Area Air Quality Management District data collected at 939 Ellis St. near Van Ness Ave., about 1.2 miles southwest of the site.

C. EMPLOYMENT, HOUSING AND FISCAL FACTORS

LOCAL AND REGIONAL COMMERCIAL SPACE AND EMPLOYMENT

San Francisco is the major office center in the Bay area, with approximately 57.3 million gross sq. ft. of office space./1/ During the 1970's, space in

downtown office buildings was added at a rate of about 1.7 million gross sq. ft. per year; approximately 32.4 million gross sq. ft. were constructed between 1960 and 1981 (see Appendix C, Table C-1, p. 214). An additional 5.6 million gross sq. ft. of office space will be added when the buildings under construction (as of November 1981) are finished and another 3.1 million sq. ft. of office space has been approved but is not yet under construction (as of November 1981).

The largest employment growth in the Bay area from 1970 to 1978 occurred in the office sector, with over 60 percent of the regional increase in total work force. A total of 1.2 million people in 1978 held office jobs in the Bay Area, with nearly 70 percent employed by firms serving the local population. Over 55 percent of the 280,000 office workers employed in San Francisco worked for employers such as national or regional headquarters which serve a wider geographical area./2/

In early 1981, annual rents in the newer downtown office buildings ranged from about $24 to $35 per sq. ft. Office space in the buildings that will go on the market in 1984 is expected to command annual rents of between $35 and $50 per sq. ft. In December, 1981, the vacancy rate in downtown office buildings was estimated to be 0.36 percent according to a real estate survey./3/ Low vacancy rates coupled with rapidly growing rents suggest that the supply of new office space in San Francisco has not kept pace with demand.

If office employment in San Francisco continues to account for the same percentage of overall employment growth as it has in the past decade, projections by the Association of Bay Area Governments (ABAG) suggest that a net increase of about 1.25 million sq. ft. of office space will be required each year between 1980 and 1985 to accommodate that growth./4/ Demand for office space, however, could be even greater. The ABAG projection indicates that 1.25 million additional sq. ft. of office space will be occupied each year. This could be because no more than that would be demanded or because no more would be supplied. If occupancy is limited by supply, then more than 1.25 million sq. ft. of new space would be occupied each year if more than that amount were built. Vacancy rates and the rate of rent increase suggest a

backlog of demand. One commercial real estate broker foresees that by 1984, 9.1 million sq. ft. of office space will be available, and all but about two million of this amount is presently leased./5/

With the apparent shortage of office space in San Francisco as one factor, some potential users of San Francisco office space have located elsewhere. While the City houses 60 percent of the region's office space, 56 percent of the new construction, based on building permit value, took place outside the City from 1972-1979./6/ Cheaper space in outlying areas attracts companies that do not need a downtown San Francisco location or can shift their support functions out of the City. For example, approximately nine million sq. ft. of new office space is under construction or planned in the next ten years in major projects in San Mateo County. Office space construction in Contra Costa County is averaging one million sq. ft. a year. Annual rents for new office space in both of these areas average from about $15 to $18 per sq. ft. It has been estimated that in San Francisco the annual tax cost to the employer in a 400-person office is $305.29 per employee while in Concord the cost per employee is $47.24./7/

EMPLOYMENT AND TENANT MIX AT THE PROJECT SITE

Businesses at the project site employ approximately 600 persons. Tenants in the 340 Market St. building include three offices, a savings bank, a men's clothing store and a subsurface parking garage. The 320 Market St. building is occupied by six offices and a drugstore. The primary office tenants of the 340 and 320 Market St. buildings are the Levi Strauss Company and Standard Oil of California, respectively.

HOUSING

A description of regional and San Francisco housing characteristics is included in the Five Fremont Center, Final EIR (EE.80.268, Certification Date March 12, 1981), pp. 37 - 44. This report is available for public review at the Office of Environmental Review, 45 Hyde St., Room 319, and is hereby incorporated by reference into this EIR pursuant to California Environmental

Quality Act (CEQA) guidelines, California Administrative Code, Title 14, Section 15140. Information on the housing stock includes amount, growth factors, vacancy rates and purchase and rental costs. The information from the Five Fremont Center Final EIR may be updated based upon recently available information. According to 1980 census data for San Francisco, the vacancy rate for owner-occupied housing was 0.6 percent and the vacancy rate for rental units was 2.7 percent./8/ Both regional and San Francisco housing stock are characterized by low growth, low vacancy rates and high purchase and rental costs in relation to typical wages paid. These factors combined have tended to constrict the supply and affordability of housing in San Francisco.

FISCAL FACTORS

The assessed value of the two properties on the site in fiscal year 1981-82 is $8,294,000 (property is now assessed at 100 percent of fair market value). At the 1981-82 property tax rate of $1.19 per $100 assessed valuation, the properties yielded about $98,700 in property tax revenues, distributed as shown in Table 2.

TABLE 2: DISTRIBUTION OF PROPERTY TAX REVENUES FROM PROJECT SITE IN 1981-82

Agency	Ad Valorem Tax Rate	Percent	Revenues*
City and County of S.F.	$0.945	79.4	$78,370
S.F. Unified School District	0.142	11.9	11,740
S.F. Community College District	0.025	2.1	2,070
Bay Area Air Quality Management District	0.002	0.2	200
BART	0.076	6.4	6,320
TOTAL	1.19	100.0	$98,700

* Based on the 1981-82 composite tax rate of $1.19 per $100 of assessed valuation.

SOURCE: San Francisco Controller's Office

General Fund revenues to the City and County of San Francisco from the non-BART sales tax, payroll tax, gross receipts tax, and non-bond property tax, will total about $343,900 from the site in 1981.

The City incurs costs in serving the existing buildings. Police, fire, and general government expenditures are supported primarily by the General Fund. Most street maintenance, street improvement, and traffic control costs are supported by other revenue sources such as fees, fines, and federal and state aid.

NOTES - Employment, Housing, and Fiscal Factors

/1/ San Francisco Department of City Planning, November 1981, a table on "Major Office Building Construction and Conversion in San Francisco" (see Table C-1, Appendix C, p. 214).

/2/ Association of Bay Area Governments (ABAG) and Bay Area Council, December 1979, San Francisco Bay Area Economic Profile.

/3/ Coldwell Banker, "Office Survey Vacancy Index," December 28, 1981.

/4/ Association of Bay Area Governments (ABAG) and California Employment Development Department (EDD) data indicates that about 60 percent of the growth in San Francisco employment between 1972 and 1978 was in offices. ABAG projects that employment in San Francisco will increase 41,400 between 1980 and 1985, or an average of 8,300 per year. Sixty percent of that, or 5,000 jobs, are expected to be in offices. Assuming 250 gross sq. ft. of office space per employee, office employment growth would require an additional 1.25 million sq. ft. of office space each year. (Association of Bay Area Governments and Bay Area Council, San Francisco Bay Area Economic Profile, December 1979, pp. 40 - 43; California Employment Development Department, Wage and Salary Employment, By Industry, San Francisco City and County, 1972-1978.)

/5/ San Francisco Examiner, "Effects of S.F. Office Space Squeeze," January 18, 1981, report on a real estate conference sponsored by Coldwell Banker.

/6/ Association of Bay Area Governments (ABAG), April 1981, Bay Area Office Growth, Working Papers on the Region's Economy, Number One.

/7/ San Francisco Examiner, "B of A Quake Hazard Alibi Causes a Political Quake", June 15, 1981.

/8/ Department of City Planning, Memorandum titled "Vacancy Rates," February 24, 1982, from Dean Macris, Director of Planning.

D. TRANSPORTATION

TRANSIT

The site area is served by electric trolley, diesel bus, and light-rail vehicle (LRV) lines of the San Francisco Municipal Railway (Muni). Regional service is provided to and from the East Bay by the Bay Area Rapid Transit District (BART) at the Embarcadero Station on Market St. and by the Alameda-Contra Costa (A-C) Transit District buses from the Transbay Transit Terminal one block south of the site. Peninsula service is provided by the Southern Pacific Transportation Company from their terminal at Fourth and Townsend Sts. and by the San Mateo County Transit District (SamTrans), which has bus routes and stops along various streets in the area, including Mission St., and transfer connections at the Daly City BART Station. The Golden Gate Bridge, Highway and Transportation District (Golden Gate Transit) provides peak-period bus service to Marin and Sonoma Counties from a.m. stops on Battery and First Sts. near Market St., and p.m. stops on Fremont, Pine and Sansome Sts., from the Transbay Terminal, and from stops along Howard and Folsom Sts. Golden Gate Transit also provides ferry commute service to terminals in Larkspur and Sausalito from the Ferry Building and Harbor Carriers, Inc. provides service to Tiburon. Golden Gate Transit operates a van-pooling program to North Bay areas. There are currently about 70 van pools commuting to San Francisco from Marin and Sonoma Counties; most of these commute to the Financial District. A car pooling program, RIDES for Bay Area Commuters, provides leasing and matching services for establishing van and car pools. Independently owned and operated jitneys provide additional transit service on Mission St. during the peak commute hours.

Muni

Market, Mission, Fremont and First Sts. in the vicinity of the site are Transit Preferential Sts. on which the flow of Muni vehicles is to be expedited using Transportation System Management (TSM) techniques./1,2/ The principal TSM techniques now in effect are exclusive bus (diamond) lanes, the prohibition of left turns, curb-side parking prohibitions between 4-6 p.m. on Mission St., and an exclusive transit turning movement from eastbound

Market St. to southbound First St. Fremont and First Sts. are designated as Pedestrian/Transit/Service Sts. and Market and Mission Sts. are designated as Transit Arterials./1/ The Bureau of Traffic Engineering is presently studying traffic patterns in the area to optimize signalization for transit flow. Peak-hour headways between Muni vehicles on First and Fremont St. (between Market and Mission Sts.) are now about 75 seconds, and are projected to be 35 seconds by 1986./3/

Muni has plans to increase the capacity of its downtown service in several ways. Fifteen additional Light Rail Vehicles (LRVs) are on order for use in the Muni Metro System. Construction of a loop to replace the existing stub-end terminal at The Embarcadero is planned, with a possible surface extension on The Embarcadero; implementation is partly contingent upon federal funding, which has not yet been secured. Also planned is the introduction of articulated buses with a capacity 50 percent larger than conventional buses. None have been ordered to date./3,4/ Further integration of BART into the downtown transit system is planned by allowing use of Muni Fast Passes for travel on BART trains within San Francisco. Increases in above-ground route capacity are planned by restrictions on automobile use on Market St. and other streets, which would reduce running times on lines using these streets. Capacity is planned to increase further from additional use of express buses.

Present scheduled outbound capacity on routes serving the Central Business District between 4:30 and 5:30 p.m. is about 42,000 passengers. The projected capacity in 1985 is about 53,000./3,4/ The increase in capacity is planned to approximately match the increase in demand, so that present operating conditions, such as excessive crowding on some vehicles, are not expected to improve./4/

The project site is centrally located for access to all transit lines. All Muni Metro LRV and BART lines serve the site from the Embarcadero subway station at Beale and Market St. Forty-one Muni bus and trolley lines stop within 2,000 feet (walking distance) of the site. Also within walking distance are the Transbay Terminal and the Ferry Terminal. Bus service to the Southern Pacific Depot is available within two blocks via Routes 27, 42, and 80X. As shown in Figure 18, about 15 routes run within one block of the site. Both legs of the Route 42 Downtown Loop, stop within two blocks.

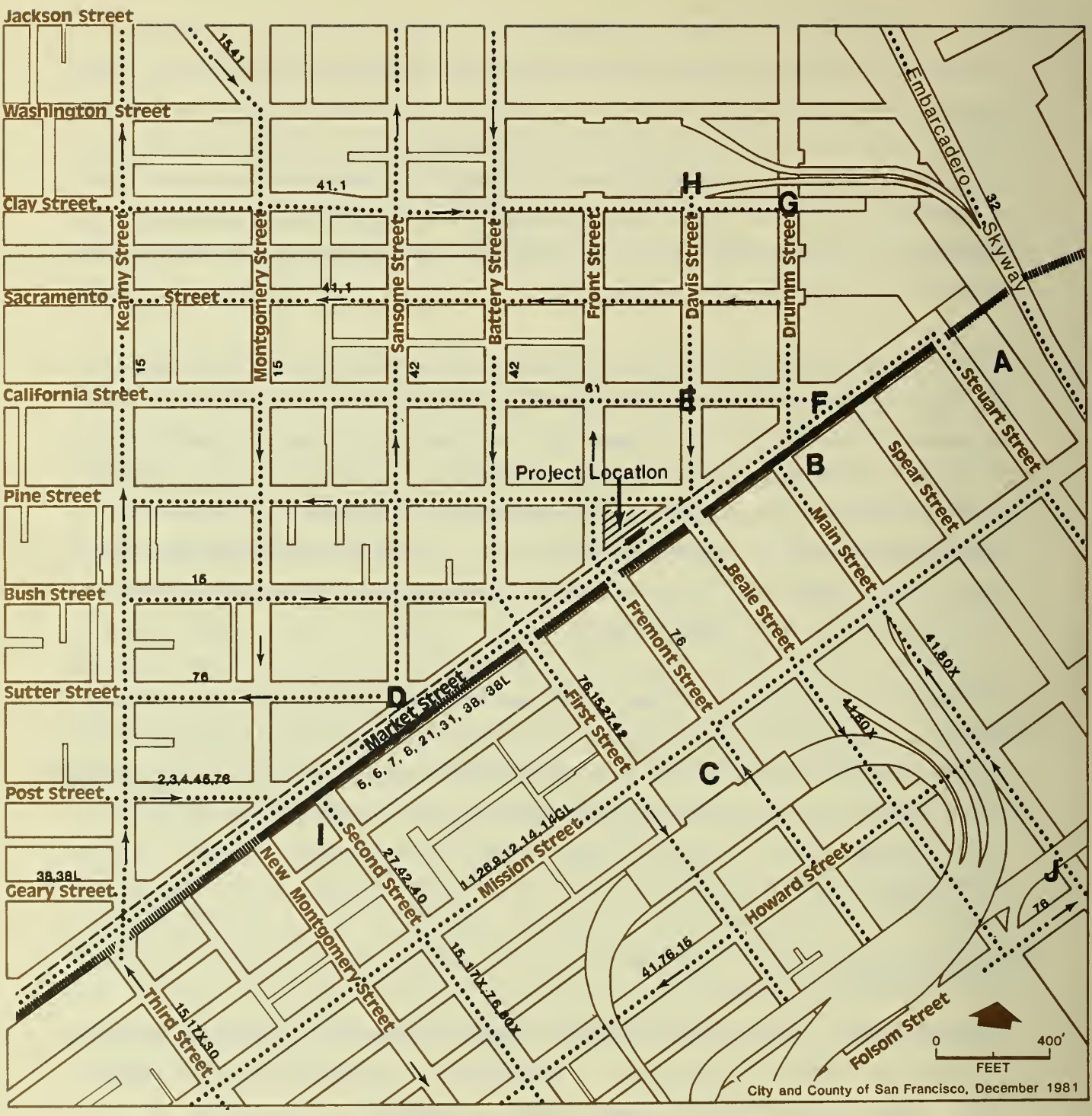
Muni has established maximum recommended passenger loadings (a load factor of 1.0) which are used as a basis for scheduling peak-hour trips on each route, ranging from 144 percent to 220 percent of seated capacity, depending on the vehicle type./3/ Loading in excess of the recommended maximum increases passenger loading time, reduces schedule adherance, and provides a low level of passenger comfort. Figures D1-D3, Appendix D, p. 219 show peak-hour conditions on several Muni lines and Table D-4, p.224 shows peak load factors on Muni lines serving the Downtown..

Environmental Science Associates surveyed Muni vehicles serving the project site and found that load factors (the ratio of the number of riders to the recommended maximum) varied between 0.1, on the 7 and 8 Routes and 1.0 on the 21 Route. Since the site is near the origin of most routes, the load factors are lower than at other points on the routes. The Muni Metro N Route load factor was observed to increase from 0.5 to 0.9 between the Embarcadero and Civic Center Stations. Table D-3, p. 223 in Appendix D, shows the load factors observed on the Muni lines.

The Muni Five-Year Plan outlines a program for integrating Muni and regional service. Programs for improving route structures, collection procedures, and regional transfer coordination are planned which would increase the percentage of non-San Francisco residents (presently 10 percent) making use of Muni. These programs would primarily affect trips to non-downtown locations and the other eight Bay Area counties.

Other Carriers

Regional transit systems had outbound, afternoon peak-hour, downtown patronage of 42,000 in 1980, with capacity for 59,000./3,5/ SamTrans and BART exceed their seated capacities during peak hours, but operate at less than 100 percent of total capacity. The other regional carriers operate during peak hours at less than 100 percent of their seated capacity, although, some routes experience loadings in excess of seated capacity from five to 30 minutes during the peak hour. On most systems, peak demand is more intense during the p.m. period than the a.m. period.



Legend

Surface Routes
Muni Underground
BART Line
BART Station
Route Terminals:

A	Ferry Terminal	2,7,8,9,11,12,14,14GL,14X,21,31,71,72
B	Embarcadero Station	J,K,L,M,N
C	Transbay Terminal	5,6,27,38,38L
D	Sutter and Sansome	3,4,45
E	California and Davis	1X,31X,38AX,38BX
F	61 G 1 H 80X I 17X,40 J 41	
▬	Bus Stop on Project Block	

Municipal Railway, Interim Map, January 1982

FIGURE 18:
Muni Routes in the Vicinity of the Project Site

PEDESTRIANS

Existing p.m. peak-hour pedestrian traffic volumes on sidewalks around the project block and in crosswalks across Market, Pine, Front, and Davis Sts. are in the range of 10 to 40 persons per minute per foot of effective sidewalk width. The principal flows are along the east side of Front St. on the project block, and along Market St., where the sidewalks operate at about 20 percent and 10 percent of capacity, respectively. Of the crosswalks, the most nearly congested are those at the intersection of Pine and Front Sts., which operate at about 40 to 50 percent of capacity during the p.m. peak hour. Also, about 40 to 50 percent of the "reservoir" space in the corners of that intersection is used by pedestrians waiting to cross./6/

VEHICLES

Pine, Front, and Market Sts. border the triangular project block on the north, west and south, respectively. Each of these streets is a transit street. During peak hours there are about 100 buses per hour on both Market and Front Sts. and 50 buses per hour on Pine St.

Pine and Front Sts. operate with two traffic lanes and are one-way westbound and northbound, respectively; Market St. is two-way (four lanes), but left turns from Market St. are prohibited at its intersections with Front and Pine Sts. Through movements at the intersections of these streets now operate with volumes at 50 percent or less of capacity during the p.m. peak hour, and are, therefore, not delayed./7/ Turning movements at the intersections conflict with pedestrians in crosswalks, however, and vehicles encounter some delay. The right turn from Market St. (westbound) onto Pine St. and the left turn from Front St. (northbound) onto Pine St. encounter delays. Drivers making these turns have less than half of the signal cycle to complete turns due to conflicts with pedestrians in the crosswalk. Two-thirds of the 600 vehicles on Front St. during the p.m. peak hour turn left into Pine St., including all but a few of the 100 buses then on the street. The resulting backup of vehicles typically extends towards Market St. for half the block on the west side of the street, opposite the project site.

PARKING

Within a walking distance of about 2000 ft. from the site are approximately 13,000 off-street public parking spaces. When the accumulation of parked vehicles in these garages reaches its peak at late morning or early afternoon, only about 500 spaces (four percent) are vacant in the entire area. Vacant spaces are not immediately found and filled by drivers seeking to park, so there is always this de facto vacancy rate of a few percent, regardless of the extent to which parking demand exceeds the supply. It may be stated that essentially no opportunity exists to increase the number of parked vehicles in public parking garages in the area.

Demand for short-term, curbside parking in the vicinity also exceeds the available supply; spaces vacant during business hours are virtually nonexistent.

Around the project block, parking or stopping on Market St. is prohibited, there is a yellow curbside loading zone in effect on Front St. from 7:00 a.m. to 1:00 p.m., and a yellow curbside loading zone along most of the block on Pine St.

NOTES - Transportation

/1/ Transit Preferential Sts. are streets where interference with transit vehicles by other traffic should be minimized. Pedestrian/Transit/Service Sts. are streets that should be oriented primarily or exclusively to the satisfaction of pedestrian, transit, or service (loading) requirements. Transit Arterials are routes of major arterial transit lines. (Transportation Element of the Comprehensive Plan, adopted by the City Planning Commission, April 27, 1972)

/2/ Transportation System Management techniques are specified in the San Francisco Municipal Railway, April 1980, Five Year Plan: 1980-85, as follows:

1) creation and enforcement of exclusive transit lanes;
2) synchronization of traffic signals with the speed of transit vehicles rather than the speed of automobiles, and the use of signal devices which can be preempted by transit vehicles;
3) extension into the street of sidewalk curbs at bus stops so that buses may pick up passengers without having to leave and re-enter the lane of travel; and
4) enforcement of traffic and parking regulations which facilitate the movement of transit vehicles.

/3/ San Francisco Municipal Railway, April 1980, Five-Year Plan: 1980-85.

/4/ Susan Chelone, Municipal Railway Transit Planner, personal communication, July 22, 1981. Information to be found in the unpublished Five-Year Plan: 1981-86.

/5/ Office of Environmental Review, October 1980, Guidelines for Environmental Evaluation - Transportation Impacts.

/6/ This discussion is based on observations made between 4:30 and 5:30 p.m. on Tuesday, September 15, Wednesday, October 21, and Friday, October 23, 1981. The analysis follows methods described in the book Urban Space for Pedestrians, by Boris Pushkarev and Jeffrey Zupan.

/7/ This discussion is based on observations made on Tuesday, September 15, and Wednesday, October 14, 1981. The estimates of capacity consider the existing signal timing on each approach.

E. AIR QUALITY

The Bay Area Air Basin in which the project site is located has been designated by the California Air Resources Board (ARB) as a nonattainment area for ozone and carbon monoxide (CO)./1/ Attainment of the CO and ozone standards is expected in 1984 and 1987, respectively.

The Bay Area Air Quality Management District (BAAQMD) operates an air quality monitoring station approximately 1.7 miles south of the site at 900 23rd St., east of Potrero Hill. A three-year summary of San Francisco data collected and the corresponding air quality standards, are shown in Appendix E, p. 227.

The highest annual pollutant concentrations in San Francisco have shown an overall improvement during the 1971-1980 period. No similar trend in the annual number of excesses has been noted. However, excesses are infrequent; only the standard for total suspended particulate (TSP) was exceeded in 1980.

CO and TSP concentrations are localized in time and space, varying with activity levels and meteorological conditions. Ozone concentrations, which arise from complex photo-chemical reactions involving hydrocarbons and nitrogen oxides, are highest downwind of sources.

The Bay Area Air Quality Plan, adopted in 1979 by the Association of Bay Area Governments, established control strategies to attain and maintain the various standards by 1982. These strategies include stationary source and mobile source emission controls and transportation improvements to be implemented by ARB, BAAQMD and the Metropolitan Transportation Commission./2/

Worst-case existing CO concentrations at sidewalks in the project vicinity, shown in Table 9, p. 101 were calculated using methods recommended by the BAAQMD./3/ No excess of either the 8-hour standard or 1-hour standard was found on Market or Pine Sts. near the project site.

NOTES - Air Quality

/1/ A non-attainment area is one in which the federal air quality standard for the designated pollutant has been violated within the past two to three years.

/2/ Association of Bay Area Governments, BAAQMD and the Metropolitan Transportation Commission, 1979, Bay Area Air Quality Plan.

/3/ Bay Area Air Pollution Control District, 1975, Guidelines for Air Quality Impact Analysis of Projects.

F. NOISE

As is typical of Downtown San Francisco, the noise environment of the project site is dominated by traffic and construction noise. Trucks, buses, automobiles, and emergency vehicles, as well as construction equipment, are the major contributors. Noise levels were measured at three locations near the project site during the afternoon on Wednesday, October 14, 1981. These three locations, at the midpoints of the site blocks on Market, Front and Pine Sts., are hereafter referred to as locations 1, 2, and 3, respectively.

At location 1, on Market St., traffic was the predominate source of noise. Infrequent diesel buses were the greatest intrusive noise source, generating levels up to 80 dBA./1/ At location 2, on Front St. and location 3, on Pine St., noise from construction in the vicinity was noticeable, in addition to traffic noise. At location 2, diesel buses and construction noise were the greatest intrusive noise sources, peaking at noise levels of about 82 dBA.

Piledriving, possibly from Five Fremont Center under construction over a block away from the project site, was also apparent at location 2 intermittently generating noise levels up to 78 dBA. Construction at the 101 California St. site and diesel buses were the dominant noise sources at location 3. Noise levels up to 82 dBA were intermittently measured at this location. Construction at the 101 California St. site can be expected to generate higher intrusive levels during the day depending on the level of worker activity and equipment use.

The data from the three noise measurement locations are summarized in Table 3. Peak-hour traffic noise levels can be expected to be approximately 3 to 4 dBA higher than those presented in the table./2/ This estimate is based on traffic counts which were undertaken on streets surronding the site on the same afternoon as the noise measurements. The Environmental Protection Element of the San Francisco Comprehensive Plan indicates a day-night average noise level (Ldn) of 70 dBA on Market, Pine, and Front Sts, adjacent to the site in 1974./3/ These noise levels are consistent with those observed during the noise measurement survey.

TABLE 3: NOISE LEVELS NEAR THE PROJECT SITE (IN dBA) MEASURED ON WEDNESDAY, OCTOBER 14, 1981.

LOCATION	TIME	Leq*	L10	L50	L90
1 (Market St.)	3:35-3:45	70	73	70	69
2 (Front St.)	3:45-3:55	72	76	71	68
3 (Pine St.)	3:55-4:05	73	76	73	70

*The Leq is the equivalent steady-state sound level which, in a given period of time, would contain the same acoustic energy as the time-varying sound-level during the same period. The L10, L50, and L90 represent the A-weighted sound levels exceeded in 10 percent, 50 percent, and 90 percent of the measurements, respectively.

SOURCE: Environmental Science Associates, Inc.

NOTES - Noise

/1/ Decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a force known as sound pressure level (commonly called "sound level"), measured in decibels. dBA is decibel corrected for the variation in frequency response of the typical human ear at commonly encountered noise levels.

/2/ A 3dBA increase in noise represents a doubling of the sound-pressure level. The human ear does not react, however, in direct proportion to the intensity of a sound-pressure level. Most people perceive noise as twice as loud when the sound-pressure level is raised by 10 dBA.

/3/ Ldn is an averaged sound level measurement, based on human reaction to cumulative noise exposure over a 24-hour period, which takes into account the greater annoyance of nighttime noises. Noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

G. ENERGY

Pacific Gas and Electric Company (PG&E) furnishes electricity and natural gas to the City of San Francisco. PG&E obtains a portion of its electrical energy from renewable resources including geothermal and hydroelectric power, but will meet new demands for energy primarily by increasing the use of nonrenewable coal, oil, natural gas and nuclear fuels. Among the new power plants which are anticipated by PG&E in the near future are the Diablo Canyon nuclear power plant in San Luis Obispo County and new geothermal plants in the Mayacmas Mountains. The status of the Diablo Canyon Plant is uncertain; it may not provide power as soon as PG&E expected. In response to a directive of the State Public Utilities Commission, PG&E will also be required to increase generating capacity from co-generation projects, which generate electricity in combination with industrial processes that already use fossil fuels as a source of heat. PG&E also anticipates increased purchases of electricity from other utilities; this power would come primarily from hydroelectric and nuclear power plants in the state of Washington.

Energy consumption on the project site is associated with the existing 14,000 sq. ft. of retail space and 130,800 sq. ft. of office space. The existing buildings on the site were built before present State energy standards. The two existing structures on the site consumed 7.4 million

kilowatt hours of electricity and 32,000 therms of natural gas in 1981 for a total of 79 billion Btu at-source. /1,2/ This represents consumption of approximately 487,000 Btu at-source per sq. ft. per year. This relatively large annual energy consumption is probably due to the presence of extensive computer facilities for three of the office tenants presently on the site.

Notes - Energy

/1/ Monica Quan, Accountant, Honorway Investment Corporation, telephone communication, February 25, 1982.

/2/ Btu, British thermal unit, a standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water 1 degree Fahrenheit (251.98 calories) at sea level. The term 'at-source' means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy which occur during generation and transmission of the various forms of energy as specified in: FRCDC, 1977, Energy Conservation Design Manual for New Nonresidential Buildings, Energy Resources Conservation and Development Commission, Sacramento, CA; and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978, Energy and Transportation, Sacramento, CA. (Project 20-7, Task 8).

H. GEOLOGY, SEISMOLOGY, AND HYDROLOGY

GEOLOGY

The site is located on flat land about one mile from San Francisco Bay. The site is at about elevation 0, San Francisco Datum (SFD), which is 8.6 ft. above mean sea level./1/ Higher land is located to the west at Nob Hill, to the northwest at Telegraph Hill, and to the southeast at Rincon Hill.

Before 1850, the site was under the waters of San Francisco Bay, within Yerba Buena Cove; the land has since been reclaimed by the placement of fill, consisting of dune sand, silt, clay, rock waste from excavations, organic material, and garbage. Several feet of settlement have occurred in the vicinity since the fill was placed, although the rate of settlement has diminished considerably in recent years (Dames & Moore, 1979, see Note /2/).

A detailed soils and foundation investigation has not yet been prepared for the site, although one would be prepared prior to construction. Based on data developed for two high-rise buildings adjacent to the site, 444 Market St. and 101 California St., subsurface conditions at the site can be approximated./2/ Fill underlies the site to an average depth of about 25 ft. Beneath the fill are recent Bay deposits (Bay Mud) from about 25 to 55 ft. in depth, a layer of sand interspersed with layers of silt and clay from about 55 to 70 ft. in depth, a layer of older Bay sediments (Older Bay Clay) from about 70 to 150 ft. in depth, a layer of sand from about 150 to 190 ft. in depth, and another layer of older Bay sediments from about 190 ft. to 235 ft. in depth. This last layer extends down to bedrock, composed of rocks of the Franciscan Formation. The fill, Bay Mud, and upper sand layers are compressible, unstable and generally unsuitable for support of multistoried buildings. All high-rise structures in the project vicinity are supported on piles driven down to or just above the older Bay sediments. The underlying old Bay clays are stiff and capable of bearing heavy loads.

SEISMOLOGY

No active faults are known to exist within the City of San Francisco./3/ Several active faults in the San Francisco Bay Area, including the San Andreas Fault, the Hayward Fault, and the Calaveras Fault, could affect the site. The San Andreas Fault is located about 10 miles to the southwest; the Hayward Fault is about 15 miles to the east; and the Calaveras Fault is about 30 miles to the east.

Both the San Andreas Fault and the Hayward Fault have produced major and minor earthquakes in the past, and can be expected to do so in the future. Within the next 60 to 170 years (estimates of the recurrence interval vary), at least one earthquake of the magnitude of the 1906 San Francisco Earthquake (about 8.3 on the Richter Scale) can be expected to occur on the San Andreas Fault./4/ Smaller earthquakes, such as the Daly City earthquake of 1957 (about 5.3 on the Richter Scale) can be expected with greater frequency than a major earthquake.

Major seismic hazards on the project site include groundshaking, liquefaction, and subsidence./5/ Groundshaking, usually the most destructive component of earthquakes, is expected to be "violent" for a 1906-magnitude earthquake. Such groundshaking could cause "fairly general collapse of brick and frame structures when not unusually strong", and "serious cracking of better buildings"./6/ Liquefaction may also occur in the sandy fill directly below the site (Dames and Moore, 1975, see Note /2/).

HYDROLOGY

No water bodies, springs, or water courses are located on the site. Under natural drainage conditions the site would receive the runoff from surrounding areas to the north and west. The site is covered with impermeable surface; thus, all rainfall flows as runoff from the site and is directed to City storm drains. Surface runoff is generally greatest during the wet-weather November-April period.

The groundwater level under natural conditions probably occurs at about elevation -10 feet, SFD. The groundwater level may be lower, due to previous dewatering at the adjacent 101 California St. site. Groundwater levels also fluctuate with the seasons, tides, and amount of rainfall received during the year.

The site is located within the estimated run-up area of a 500-year tsunami./7/ Assuming a 20-foot-high run-up at the Golden Gate, the 500 year tsunami would run up about 8 to 10 ft. above mean sea level./8/ Since the ground elevation of the site is at about 8.6 ft. above mean sea level, basements and the ground floor of structures on the site could be subject to water damage. The 100-year tsunami, which would occur on the average of once every 100 years would run up about 5 ft. above mean sea level and would not, therefore inundate the site.

NOTES - Geology, Seismology, and Hydrology

/1/ San Francisco Datum is a reference point for surveying and vertical distance measurements. The elevation of the San Francisco Datum is 8.6 feet above mean sea level.

/2/ Reports referred to are:
1) Dames & Moore, June 8, 1979, Geotechnical Investigation, Proposed Office Building, San Francisco, California, prepared for Gerald D. Hines Interests (i.e. 101 California Street Building);
2) Dames & Moore, January 31, 1975, Foundation Investigation, Proposed 444 Market Street Building, San Francisco, California, prepared for the Continental Development Corporation.

/3/ An active fault is a fault along which movement has occurred within the last 10,000 years, or which has exhibited historic earthquake activity.

/4/ The Richter scale is a logarithmic scale developed by Charles Richter to measure earthquake magnitude by energy released, as opposed to earthquake intensity as determined by effects on people, structures and earth materials. The San Francisco earthquake of 1906 is estimated to have had a Richter magnitude of 8.3.

/5/ Liquefaction is earthquake-induced transformation of a stable granular material, such as sand, into a fluid-like state, similar to quicksand. Subsidence is an uneven local settlement of the ground's surface. Although it can occur under normal (static) conditions, it is frequently activated by strong ground motion, such as that from a major earthquake.

/6/ URS/John A. Blume and Associates, 1974, San Francisco Seimic Safety Investigation, Geologic Evaluation.

/7/ Tsunamis, also known as seismic sea waves or "tidal waves", are long-period waves generated by some earthquakes, undersea landslides, or volcanos; upon reaching the shallow water of coastal areas, the waves greatly increase in height and may cause localized flooding. The San Andreas Fault does not cause earthquakes of the type that cause tsunamis. The 500-year tsunami is the largest tsunami that would (statistically) occur within the next 500 years. The run-up of a tsunami is the height above still water level reached by a wave as it washes up on a shore or structure.

/8/ Garcia, A.W., and J.R. Houston, 1975, Type 16 Flood Insurance Study: Tsunami, Predictions for Monterey and San Francisco Bays and Puget Sound, Technical Report H-75-17, Hydraulics Laboratory, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

IV. ENVIRONMENTAL IMPACTS

An Initial Study of the proposed project was published November 13, 1981, and a determination was made that an Environmental Impact Report was required. Issues that were considered to require no further discussion as a result of the Initial Study include: land use compatibility, operational noise, construction-related air quality, public services and utilities, biology, health hazards, and cultural and historic factors. Therefore, this EIR does not discuss the above issues. The Initial Study is incorporated herein as Appendix A, p. 161, and may be referred to for a discussion of these issues.

A. LAND USE AND ZONING

The project would require demolition of the two existing buildings on the site at 320 and 340 Market St., both of which are owned by the project sponsor. Neither building received a rating in the survey conducted by the Foundation for San Francisco's Architectural Heritage nor is listed in the City's list of Architecturally and/or Historically Significant Buildings in the Downtown.

The project would respond to the definition and purpose of the C-3-O (Downtown Office) District stated in Section 210.3 of the City Planning Code that the District play a leading national role in finance, corporate headquarters and service industries, and serve as an employment center for the region. The project would be consistent with Objective 6 of the Commerce and Industry Element of the Comprehensive Plan by maintaining and improving San Francisco's position as "a prime location of financial, administrative, corporate and professional activity," and would conform to Policy 2 of that objective in contributing to the maintenance of a compact downtown core.

The proposed building height of about 375 ft. would be about 225 ft. less than maximum of 600 ft. permitted in the 600-I Height and Bulk District. The building length and diagonal measurement would be 220 ft., exceeding the

maximum permitted length and diagonal dimensions of 170 ft. and 200 ft., respectively. The project would require an exception to the bulk limitations of Section 271 of the City Planning Code, in accordance with the procedures for Conditional Use authorization described in Section 303 of the Code. The bulk limitations may be exceeded "to a certain degree," according to Section 271 of the Code, if the project would result in the "achievement of a distinctly better design, in both a public and a private sense, than would be possible with strict adherence to the bulk limits, avoiding an unnecessary prescription of building form while carrying out the intent of the bulk limits and the principles and policies of the Master Plan."

Gross floor area of the lobby, office, and retail space would be approximately 257,000 sq. ft., representing a basic Floor Area Ratio (FAR) of 14:1. Project plans include about 85,900 sq. ft. of residential use. The square footage of the proposed residential units would cause the building to exceed the 14:1 basic FAR permitted in the C-3-O District. The FAR represented by the residential portion of the project would be approximately 4.7:1, for a total project FAR of about 18.7:1.

The use of bonuses, described in Section 126 of the City Planning Code, would permit space in addition to the basic FAR. Permitted bonus space could be used for, and is limited to, residential uses, under the Interim Controls on downtown high-rise office development (Municipal Ordinance No. 240-80, effective July 1, 1980). The project sponsor intends to request approximately 85,900 sq. ft. of bonus floor area, which would provide an FAR of about 18.7:1.

The proposed subsurface parking levels would extend beneath the Front St. and Pine St. sidewalks. This would require a variance from Section 155(b) of the City Planning Code, which requires every off-street parking space to be provided entirely on private property. A revocable encroachment permit, to allow subsurface parking beneath public sidewalks, would be applied for with the building permit. The parking facility would use only subsurface public space and would not interfere with utility lines, but may preclude the possibility of planting trees on the Pine St. and Front St. sidewalks; according to the architect, about five ft. of root space would be available beneath the affected sidewalks./1/ The Urban Design Element of the

Comprehensive Plan contains Policies for Conservation which maintain a presumption against giving up street areas for private use. The project would conflict with Policy 9 criteria for review of proposals to release street areas, because providing parking on the project site would be contrary to the Transportation Element policy which discourages new long-term parking in the Downtown. The encroachment permit would respond to Policy 10 which permits release of street space in the least permanent manner, such as issuance of a revocable permit in preference to a street vacation. The Departments of City Planning and Public Works would make a recommendation to the Board of Supervisors who would then hold a public hearing on the encroachment permit application; the permit would require final approval from the Board.

The two levels of subsurface parking would contain about 22,300 net sq. ft. (exclusive of ramps, and elevator core area) and would accommodate about 47 passenger vehicles. Twenty-one spaces, or about 10,000 net sq. ft., could be permitted as an accessory use to the residential units as 150 percent of the residential parking requirement in this C-3 District. The remaining 12,300 net sq. ft. (about 26 spaces) could be permitted as accessory parking for the office and retail portions of the building. Up to seven percent of the gross commercial floor area, about net 18,000 sq. ft., or about 38 spaces, could be permissible as accessory parking for the commercial portion of the building under Section 204.5 of the Code; this would be 28 spaces more than are proposed for this use. The project sponsor proposes to designate 37 of the 47 proposed parking spaces to serve the residential units; this allocation of spaces would require a Conditional Use authorization because Section 204.5(c) of the Code places limits on the amount of parking considered to be an accessory use. According to the project architect, the 14 parking spaces which would be required for the residential units under Section 151 of the Code in this C-3 District could be accommodated entirely within the property line if the encroachment permit were revoked after project completion./1/

The project would include a loading dock, accessible from Front St., with two stalls, each 10 ft. wide; one stall would be 35 ft. deep and the other would be 25 ft. deep. The number of loading spaces proposed would conform to the requirements of Section 152 of the City Planning Code and City Planning Commission Resolution No. 9286./2/ The loading dock dimensions would be

consistent with the requirements of Section 154 of the Code; however, the proposed dimensions would be less than the minimum requirements given in Resolution No. 9286, of 35 ft. deep and 12 ft. wide for each loading space. The proposed loading and parking plan also does not comply with Resolution No. 9286 in the following ways: The width of the curb cut for the loading dock would be 26 ft., compared to a maximum allowable of 24 ft.; the combined length of curb cuts on Front St. for the loading dock and off-street parking facility would be 37 ft., compared to a maximum allowable of 36 ft.; and, the distance between curb cuts would be 6.5 ft., compared to a minimum allowable of 20 ft. (see Figure 3, p. 12). The project would conform to the Resolution No. 9286 requirement that the total length of curb cuts for loading and off-street parking access not exceed 33 percent of any single street frontage.

Open space for project residents would be provided by private balconies for individual condominiums. The balconies are presently being designed by the architect; it is expected that each condominium would have at least 60 sq. ft. of balcony space, for a minimum of about 3,400 sq. ft. of total private open space. In addition, an athletic health club containing about 3,800 sq. ft. would serve as a common facility for residents and employees of the building. Including the rooftop observation deck, containing about 350 sq. ft., total common and private open space included in the project would be about 7,550 sq. ft. The project would be responsive to the Commerce and Industry Element of the Comprehensive Plan by providing "amenities for those who live, work and use Downtown" as well as with the open space requirement for residential use in the C-3 District (Section 135 (d) of the City Planning Code). According to Section 134 of the Code, a 25 percent rear yard (i.e. 25 percent of lot depth) would be required at the first residential level and for each succeeding residential level in this C District. The project as proposed would require a variance from this requirement.

By providing about 57 residential dwelling units, the proposed project would comply with Objective 2 of Policy 2 of the Residential Element of the Comprehensive Plan that recommends "multiple-residential development in conjunction with commercial uses in the Downtown commerical area." The 57 units would be less than the maximum number of 146 units allowed for the site by Section 215 (a) of the City Planning Code. The six and one-half

floors of condominium apartments above the office floors would be the only residential use in the vicinity of the site. Housing nearest the site is located four blocks to the north in the Golden Gateway, a multiple residential complex, four blocks to the west in two residential hotels on Kearny St., and four blocks to the south on Guy Place and Lansing St. There is no housing to the east. Housing on top of office buildings is proposed on the Dollar Block in the proposed 333 California St. project one block northwest of the site, and in the New Montgomery Place project three blocks to the west. Housing has been approved on top of office use in the Montgomery - Washington Building, about six blocks northwest of the site. The provision of housing may stimulate the development of other housing in the vicinity. There are presently few domestic retail services in the site vicinity; the nearest grocery store is about four blocks from the site. Eventually, residential services may be established within the immediate area as the amount of residential land use in the downtown district increases.

Because the site is on Market St., the project plans would be subject to discretionary review by the City Planning Commission under the provisions of its Resolution No. 6111, adopted on June 29, 1967. This resolution established "a policy of reviewing under its discretionary powers all applications for new and enlarged buildings along Market Street from the Central Freeway to San Francisco Bay." The review would be "in terms of relationship to the street, heights, cornice lines, setbacks and the placement and shaping of building towers, in order to promote the attractiveness, continuity and integrity of the street and its functions." The building would also be reviewed by the Planning Commission under its policy of discretionary review of all downtown high-rise buildings during the period of Interim Controls on the use of floor area bonuses in order to implement various policies as noted in their Resolution No. 8474 adopted January 17, 1980.

Guiding Downtown Development. In May, 1981, the Department of City Planning published Guiding Downtown Development (GDD), a report containing a series of regulatory proposals for managing development in downtown San Francisco. (See Section VII, for an alternative conforming with the recommendations contained in GDD.) GDD recommends that the basic FAR for the project site be changed from 14:1 to 12:1, with an additional FAR of 5:1 allowable for residential

uses. The allowable height would be reduced from 600 ft. to 500 ft. The gross commercial floor area of the project would exceed the GDD recommended FAR of 12:1 by 2:1. The 4.7:1 FAR proposed for housing would be approximately the same as the GDD allowable additional FAR for on-site housing of 5:1. At a total FAR of 18.7:1, the project would exceed the GDD maximum FAR of 17:1 by 1.7:1. GDD recommends that the average floor area of floors above the midpoint of the building height be about two-fifteenths less than the average floor area of the floors below the midpoint. The proposed building design, which includes one setback above the second floor of the project, would not conform to this provision. At about 375 ft., the project would be 125 ft. less than the 500 ft. GDD height limit.

The project would include ground-floor retail space, encouraged by GDD. Public works of art, valued at one percent of construction costs, are recommended in GDD. Art work would be provided at the ground level of the project, although its cost has not yet been determined. GDD policies suggest that one sq. ft. of public open space be provided for every 25 sq. ft. of gross building floor area. If this guideline were applied to the entire structure, including residential space, the recommended amount of open space would be about 13,700 sq. ft. for the project, or about 75 percent of the site area. If only applied to the commerical portion of the building, the recommended amount of open space would be approximately 10,300 sq. ft. The project as proposed would have a public gallery containing about 2,400 sq. ft. on the ground floor as a pedestrian amenity and private balconies containing a minimum of 3,400 sq. ft. in total for individual condominiums. About 3,800 sq. ft. of common open space for use by project residents and employees would be provided as an athletic health club.

GDD recommends that 640 sq. ft. of housing be constructed for each 1000 sq. ft. of office space. This ratio would yield about 150,000 sq. ft. of housing for the project, approximately 64,100 sq. ft. more than the amount proposed on-site as part of the project. If the maximum amount of office space allowed under GDD were provided, for an FAR of 12:1, GDD would not permit the construction of more than 91,800 sq. ft. of additional floor area for housing (a maximum additional FAR of 5:1) on this site. This amount would be approximately 5,900 sq. ft. more than the residential use proposed as part of

the project. That portion of the GDD housing requirement not provided on-site would have to be provided off-site. Additional housing floor area could be developed on-site under GDD if the commercial floor area of the building were reduced. GDD also recommends 0.9 units of housing per 1000 gross sq. ft. of office space. The project would contain about 57 residential units, about 150 units fewer than the 210 units recommended according to this GDD formula.

NOTES - Land Use

/1/ Jared Carlin, Project Architect, Skidmore, Owings and Merrill, personal communications, February 17, and March 26, 1982.

/2/ City Planning Commission Resolution No. 9286 and Exhibit A, "Off-Street Freight Loading and Service Vehicle Space Requirement and Guidelines," approved January 21, 1982.

B. URBAN DESIGN

VISUAL

The project would result in the demolition of the two existing medium-rise structures on the site and construction of a 26-story high-rise tower about 380 ft. tall. The project would contribute to the trend of Market St. and the Financial District from low- and medium-rise structures to high-rise development. The project would relate to nearby modern, tall buildings in scale and design, but would contrast with older development in the vicinity.

The project would not obstruct any scenic view or vista now available to the public as the building would be surrounded by structures as high or higher than the project. The project would block short-range views from nearby existing buildings and from the 101 California St. Building which is now under construction. The project would block some views of the Bay from the adjacent 444 Market St. building; interrupted views would generally be similar to those created in the project.

The project would be visible primarily from nearby buildings and street segments (see Figures 19 and 20, pp. 62 - 63). The proposed building would not be a prominent feature on the skyline nor be visible from long-range view points due to intervening structures.

Crown Zellerbach Bldg. | 22 Battery St. | 444 Market St. | Mutual Benefit Life Bldg. | 525 Market St.

LEGEND

Project Outline

FIGURE 19: View from the West on Market St. (near First St.)

LEGEND

Project Outline

FIGURE 20: View from Market and Main Streets

DESIGN

The project design is intended by the architect to complement adjacent structures and present a unifying element in the architecture of the site vicinity. The building base would be triangular in form with rounded corners. A building setback would be provided above the second floor, at a height of about 40 ft. This setback is intended by the architect to define the building base and provide pedestrian scale. The 40 ft. building base would relate to the bases of four structures on the south side of Market St.: the PG&E, Matson, Federal Reserve Bank (under construction) and Southern Pacific buildings.

Above the setback at 40 ft., a rounded semi-circular frontage would be located along Front St. A recess would be formed in the building tower at the midpoint of both the Market St. and Pine St. facades. The building would narrow approaching the intersection of Pine and Market Sts. with the "prow" oriented towards the foot of Market St. The tower form is intended by the architect to promote visual interest and reduce building bulk. The facade of the project would be approximately 35 percent glass and 65 percent granite. Both clear and green-tinted glass are under consideration; the granite treatment and coloration have not yet been determined.

The Urban Design Element of the San Francisco Comprehensive Plan provides a basis in City policy for summarizing the urban design implications of the proposed project (see Table 4, pp. 65 - 67).

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN PRINCIPLES AND POLICIES OF THE COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT

URBAN DESIGN POLICIES	RELATIONSHIP OF PROJECT TO POLICIES
A. Policies for City Pattern	
1. Policy 1. "Recognize and protect major views in the city, with particular attention to those of open space and water." (p. 10)	The project site is adjacent to the Pine St. view corridor and one block south of the California St. view corridor. The project would not block existing long-range views as it would be surrounded by taller structures (to the north, 48-story 101 California St.; to the northeast, 32-story Mutual Benefit Life; to the south, 33-story 333 Market St.; to the southwest, 36-story One Metropolitan Plaza; to the west, 38-story 444 Market St.; and to the northwest, 33-story 100 Pine St.). No short-range pedestrian views would be blocked and new views of the Bay would be created from the project tower.
2. Policy 3. "Recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts." (p. 10)	The proposed project would be similar in height and bulk to existing high-rise buildings which dominate distant views of the downtown and, therefore, identify the downtown area. The project would be shorter than most neighboring buildings, however, and would not be visible from distant viewpoints on the downtown skyline.

* City and County of San Francisco, 1971, Comprehensive Plan, Urban Design Element (page references shown in parenthesis).

SOURCE: Environmental Science Associates, Inc.

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN PRINCIPLES AND POLICIES OF THE COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT (Continued)

3. Policy 6. "Make centers of activity more prominent through design of street features and by other means." (p. 12)	Landscaping would be installed at the building entrances and in the public gallery. The building would have widened sidewalks, multiple building entrances, a public gallery and a direct connection to the Embarcadero Station of the Market St. subway; these features are intended to shorten walking distances and improve pedestrian access.
4. Policy 8. "Increase the visibility of major destination areas and other points of orientation." (p. 13)	The project would be surrounded by taller structures and would not be visible on the downtown skyline from distant viewpoints.
B. Policies for Conservation	
5. Policy 6. "Respect the character of older development nearby in the design of new buildings." (p. 25)	The building design would contrast with the older structures in the vicinity. The 40-ft. project setback would relate to the bases of several nearby buildings on the south side of Market St.
C. Policies and Principles for Major New Development	
6. Policy 1. "Promote harmony in the visual relationships and transitions between newer and older buildings." (p. 36)	See Item 5 above. The project is intended to complement adjacent structures and provide a unifying element in the architecture of the vicinity. See Figures 2, 19 and 20, pp. 11, 62, and 63.
7. Policy 5. "Relate the height of buildings to important attributes of the city pattern and to the height and character of existing development." (p. 36)	See Items 2 and 4 above. Although taller than existing buildings on the site and older development in the vicinity, the project would be about 275 ft. shorter than the permitted maximum. The project would be surrounded by taller high-rise buildings.

TABLE 4: RELATIONSHIP BETWEEN APPLICABLE URBAN DESIGN PRINCIPLES AND POLICIES OF THE COMPREHENSIVE PLAN* AND THE PROPOSED PROJECT (Continued)

8. Policy 6. "Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction." (p. 37)	The project would exceed the Code bulk limitations; however, it would be similar in scale to the 101 California St. tower that will have a diameter of about 190 ft., and less bulky than the Hyatt Regency Hotel that has a length of approximately 400 ft. and the Southern Pacific Building at One Market Plaza that has a length of 275 ft. A recess in the building tower at the midpoint of both the Market St. and Pine St. facades, the setback at a height of 40 ft. to define the building base, and the rounded corners of the building base would reduce the apparent bulk of the project.
9. Principle 8. "The use of unusual shapes for tall office, hotel or apartment buildings detracts from the clarity of urban form by competing for attention with buildings of greater public significance. The juxtaposition of several such unusual shapes may create visual disorder." (p.34)	See Item 6 above. The project design would be unusual. The triangular base and rounded tower would be different in shape than other structures on gores along Market St. The project tower would be adjacent to the cylindrical 101 California St. Building, neither of which justify visual dominance by virtue of their public importance or function. The project would contrast with the predominant rectangular form of high-rise buildings in the downtown although its modern style would be similar to many nearby structures.
D. Policies for Neighborhood Environment	
10. Policy 13. "Improve pedestrian areas by providing human scale and interest." (p. 57)	The project would feature widened sidewalks, retail shops and a landscaped public gallery to promote pedestrian interest. The 40-ft. building base is intended to provide pedestrian scale on Market St. This effect would be enhanced if the building base were finished with a different surface texture than the upper stories. The architect intends to design a well defined building base.

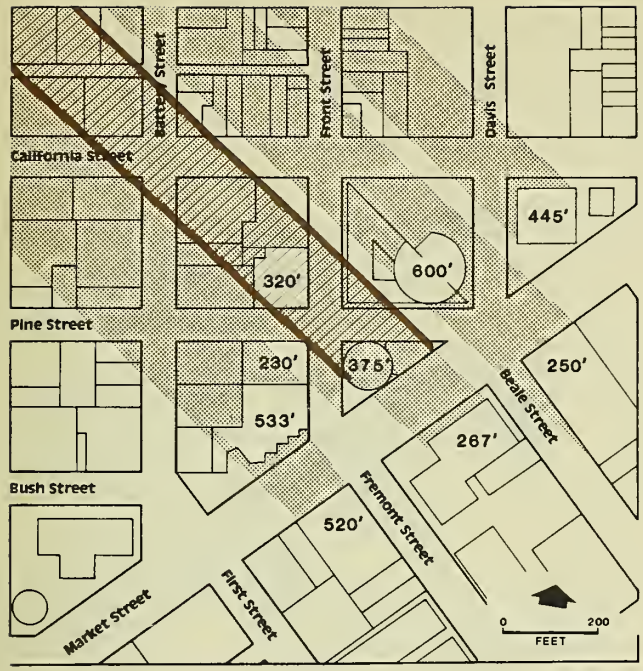
SHADOW

The project, in replacing the shorter existing structures on the site would create more extensive shadow patterns than presently occur. The project would be generally surrounded by taller buildings so that much of its shadow pattern would coincide with shadows cast by other structures in the vicinity. The project would not shade any public parks but would contribute to shadows on the plaza of the 101 California St. Building, presently under construction.

At all seasons of the year, early morning shadows due to the project would coincide with shadows cast from existing structures. Shadows cast by the PG&E, 333 Market St. and 111 Pine St. buildings would encompass the major portion of project shadows in the early morning, although new shadows would be produced on the 100 and 111 Pine St. office buildings.

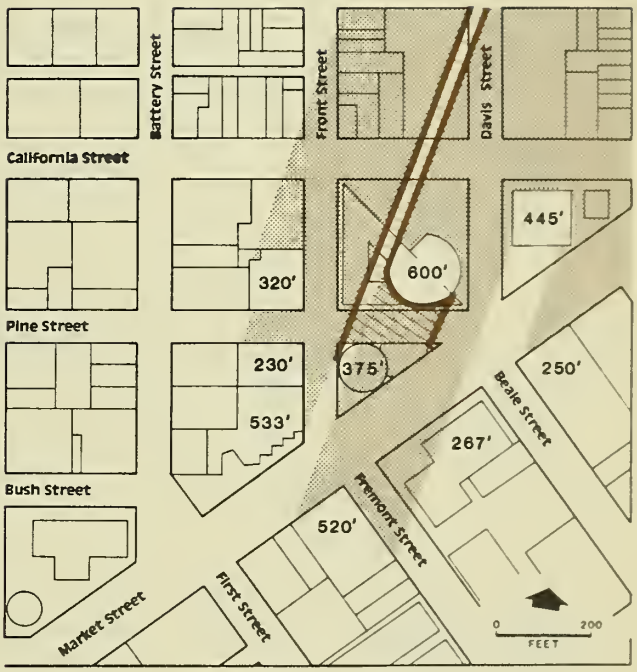
During the mid-day hours at all seasons except summer, project shadows would be included in those cast by One Metropolitan Plaza and 444 Market St., and those that will be cast by the 101 California St. tower (see Figures 21 and 22, pp. 69 and 70). In the early afternoon during winter months, the project would eliminate the corridor of sunlight between existing shadows and complete the shading of the plaza of the 101 California St. Building. During the summer at mid-day, the project would shade Pine St., north of the site between Front and Davis Sts. (see Figure 23, p.71). A portion of this area is presently shaded by the existing buildings on the site during these hours.

During the late afternoon hours of the spring, fall and winter, project shadows would be encompassed by those cast from 444 Market St. and 111 Pine St. As existing shadows from 444 Market St. presently shade the Mutual Benefit Life Building plaza during the winter months, the project would not increase shading of this plaza. The project would contribute to the shading of Market St. east of the site during the late afternoon hours of the summer, spring and fall.

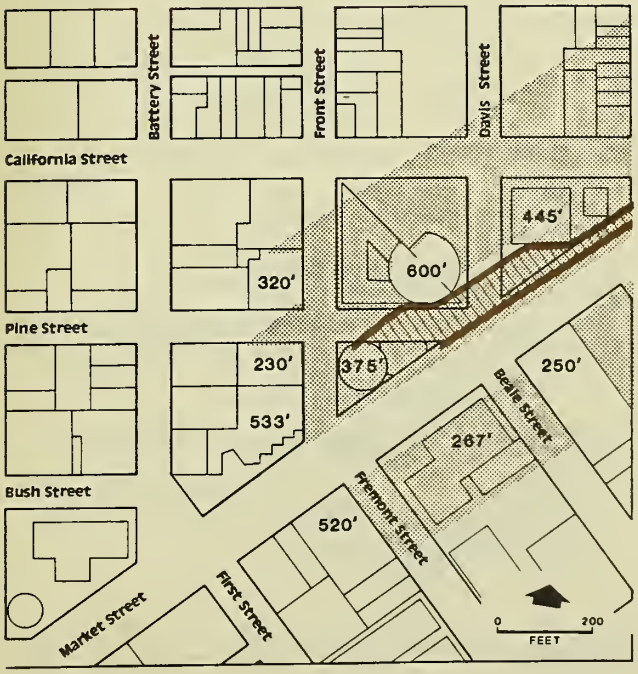


8 A.M.

1 P.M.



4 P.M.



LEGEND

Existing Shadow

Project Shadow

FIGURE 21: Existing and Project Shadow Patterns in Vicinity of Project, Mid-December

SOURCE: Environmental Science Associates, Inc.

8 A.M./9 A.M.

1 P.M./2 P.M.

4 P.M./5 P.M.

LEGEND

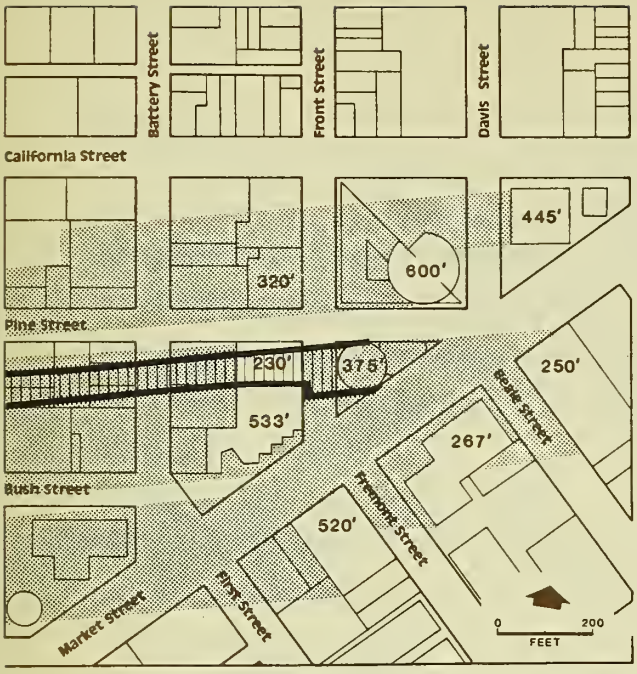
Existing Shadow

Project Shadow

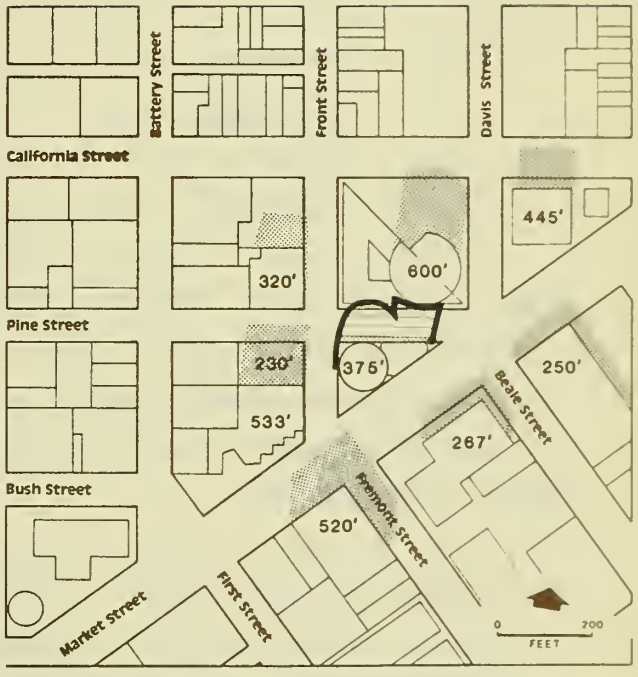
Note: September shadows are Daylight Savings Time and therefore one hour later.

FIGURE 22: Existing and Project Shadow Patterns in Vicinity of Project, Mid-March and Mid-September

SOURCE: Environmental Science Associates, Inc.

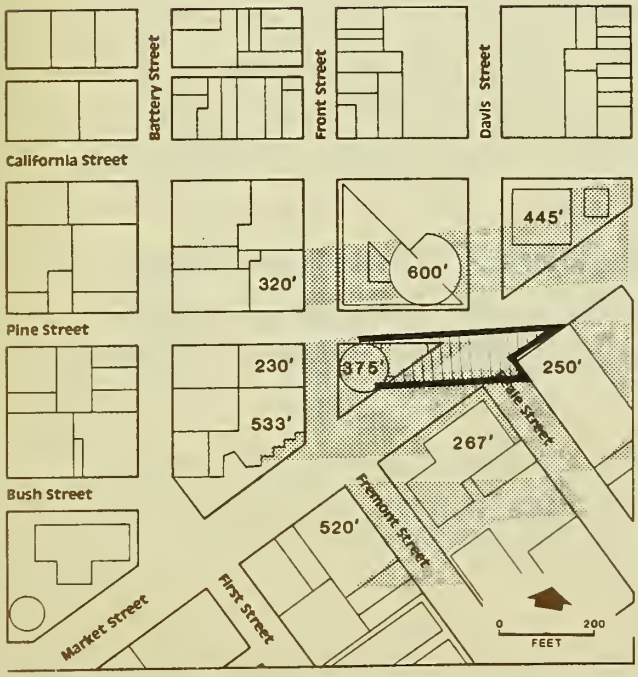


8 A.M.



1 P.M.

4 P.M.



LEGEND

Existing Shadow

Project Shadow

Note: Daylight Savings Time

FIGURE 23: Existing and Project Shadow Patterns in Vicinity of Project, Mid-June

SOURCE: Environmental Science Associates, Inc.

WIND/1/

Wind speeds at pedestrian levels are expressed as a proportion of the freestream wind speeds above the wakes of surrounding buildings./2/ This proportion is called the wind speed ratio. The relationship between the proportion of freestream wind velocity and definitions of pedestrian-level wind speeds used in earlier San Francisco EIRs is shown below:/3/

Wind Speed Class	Ratio of Pedestrian Level Wind Speed to Freestream Wind Speed
Low	0.00 - 0.19
Moderately Low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately High	0.50 - 0.69
High	0.70 - 1.00
Very High	Greater than 1.00

Wind tunnel tests of localized wind speeds and directions at and near the project site were conducted using a scale model of the site and vicinity. The study included separate tests of west, southwest, and northwest winds under existing conditions, with the proposed project, and with an alternative building design./4/

For prevailing west winds, the existing near-surface wind speed classes are low or moderately low at all measured locations. The wind along Market St. accelerates from low wind speed ratios at Mechanics Plaza (0.10-0.12) to a moderately low ratio at 444 Market St. (0.26). Winds then decelerate to a low wind speed ratio along the southeast edge of the project site (0.09), and again accelerate to moderately low ratios (0.22 at the intersection of Market, Pine, and Drumm Sts. and 0.23 at the intersection of Market, California, and Drumm Sts.). A vertical vortex that forms from the 111 Pine St. Building turns some wind from Pine St. south onto Front St. Vertical vortices also form at the northwest and southeast corners of the 101 California St. Building (currently under construction).

Upon project completion, wind speed classes near the project would remain low to moderately low under west winds. The project would change the existing wind patterns in two ways. Firstly, the wind along Market St. would remain nearly constant as it moves northeast of 444 Market St. The wind speed ratio along the southeast edge of the project site would increase from 0.09 to 0.20, but changes in wind speed ratios at other locations would be in a range from approximately -0.02 to +0.05. Secondly, no vertical vortex would form at the southeast corner of the 101 California St. Building (near Mutual Benefit Plaza).

Under southwest winds, the existing near-surface wind speed classes are low or moderately low at all measured locations. There are notable differences in wind speed ratios on opposite sides of Market St., such as 0.10 at the intersection of Market, Pine, and Davis Sts. and 0.26 at the intersection of Market and Beale Sts. Wind speed ratios surrounding the project site are low. Vortices form at the southeast corner of 444 Market St. and on the southeast and northeast sides of the 101 California St. Tower.

The project would result in several changes under southwest wind conditions. Wind speed classes along Front St. at locations on both the north and south sides of Pine St. would increase from low to moderately low. The wind speed class on the north side of Market St. between Davis and Drumm Sts. would also increase from low to moderately low (a change in wind speed ratio of 0.17 to 0.28). The wind speed on the Plaza at Market and Fremont Sts., near the 333 Market St. Building, would decrease 42 percent, from a ratio of 0.24 to 0.14. The vortices on the east side of the 101 California St. Building would merge and would be further from Market St. Under southwest winds, some wind recirculation would appear in Bechtel Plaza southwest of Beale St.

Under northwest winds, the existing near-surface wind speed classes are low or moderately low at all measured locations. Wind along Market St. accelerates from a wind ratio of 0.14 on Mechanics Plaza to 0.24 along 444 Market St., and then decelerates to wind ratios of 0.14 at the intersections of Front and Market Sts., and 0.9 between Front and Davis Sts. Winds again accelerate to a wind speed ratio of 0.14 between Davis and Drumm Sts. This pattern is similar

to that found with west winds but does not accelerate as much northeast of the project site. A vortex forms at the southeast corner of the 101 California St. Building, and there is some recirculation in Bechtel Plaza southwest of Fremont St.

Upon project completion, northwest winds would channel around the project and onto Beale and Fremont Sts., which nearly align with the northwest wind direction. This effect would result in several changes. Wind speed ratios would be approximately doubled east of the project, from low to moderately low (0.13 to 0.24) at the intersection of Market, Pine, and Davis Sts. and from low to moderate (0.13 to 0.33) at the intersection of Market and Beale Sts.

Wind speed ratios would increase about 65 percent on the plaza at the intersection of Fremont and Market Sts. (near 333 Market St.) and along Fremont St. near Market St. The vortex southeast of the 101 California St. Building would decrease and the recirculation in Bechtel Plaza would be eliminated. A recirculation zone would be created, however, on Market St. south of the project and 444 Market St.

NOTES - Urban Design

/1/ This section is based upon a study, entitled "Wind-Tunnel Studies of the 388 Market Street Building", December 1981, prepared by Dr. Bruce White as a subconsultant to Environmental Science Associates, Inc. A copy of this document is included as Appendix B, p. 193. Dr. White is Associate Professor of Mechanical Engineering at the University of California at Davis. His involvement with this project was independent of the University.

/2/ Meteorological instruments used for recording the available data on wind speeds and directions are placed so that they essentially measure freestream wind speeds. A summary of recorded wind speeds and directions in San Francisco are provided in Section III., Environmental Setting, p. 36.

/3/ Note that windspeed ratios are not actual wind speeds but ratios. Thus a point having "very high" wind speed ratio could still experience light winds on a near-calm day. Likewise, a point found to have "low" wind speed ratio could experience significant winds on an extremely windy day.

/4/ The tests included: (1) flow visualization tests, which placed a continuous stream of smoke at various locations to determine wind directions, and (2) hot-wire anemometer measurements of wind speed ratios and turbulent intensities at 20 surface locations on and near the project site.

C. EMPLOYMENT, HOUSING AND FISCAL FACTORS

PROJECT-RELATED EMPLOYMENT

About 980 permanent full-time jobs would be provided within the project. In the absence of specific information about tenants, this number was derived by applying an average sq. ft. per employee number by use to the estimated floor area that would be devoted to each use (see Table 5). The net increase in employment at the site, after subtracting approximately 600 existing jobs at the site in late-1981, would be about 380.

TABLE 5: PROJECTED PERMANENT EMPLOYMENT AT THE PROJECT SITE

Emplyoment Type	Building Space (Gross Sq. Ft.)	Space Per Employee (Sq. Ft.)	Projected Number of Employees
Office	234,500	250 *	938
Retail	10,000	400 **	25
Building Maintenance	342,900	20,000 ***	17
TOTAL EMPLOYMENT			980

* Department of City Planning, "Office Housing Production Program (OHPP) Interim Guidelines," January 1982.
** California Office of Planning and Research, Economic Pratices Manual, January 1978, pp. 35 -37.
*** High-rise buildings generally employ one janitor per 30,000 gross sq. ft. (Rodger Dillon, Secretary-Treasurer, Building Service Employees Union, Local 87, telephone conversation, April 17, 1980). The 20,000 sq. ft. per maintenance employee figure includes additional service personnel, such as security guards, building engineers and window washers.

SOURCE: Environmental Science Associates, Inc.

BAY AREA EMPLOYMENT MULTIPLIER EFFECTS

Secondary employment and income impacts would result from permanent project employment because each employed person would generate additional employment by his or her demands for goods and services, through the multiplier effect.

Assuming that the new jobs created by the project were primarily in finance, insurance, and real estate (the so-called FIRE sector), about 450 additional jobs in other sectors of the Bay Area economy would result from the growth of FIRE businesses./1/

The total number of Bay Area jobs that would be supported by growth in downtown employment due to the project would be about 830 (the 380 net project jobs plus the 450 jobs induced by the multiplier). The project would require about 250 person-years of construction labor, an average of about 150 full-time jobs throughout the 20-month construction period. About 400 additional person-years of employment would be generated in the Bay Area as a result of the multiplier effect of project construction.

OFFICE

The proposed project, together with other major downtown office buildings under construction and approved (as of November 1981) would add approximately 9.1 million gross sq. ft. of office space if all were to be built (see Appendix C, Table C-1, p. 214). Low vacancy rates together with rising rents suggest that supply has been less than demand.

The growth of office space would continue the trend of regional growth in service sector and office headquarters employment. The newer buildings would be occupied primarily by larger tenants and those with the ability to pay higher rents. Because rent levels are lower for older buildings, the space which is vacated by tenants relocating to newer buildings could become available for tenants who cannot afford the rents for new office space. /2/

HOUSING

As indicated in the previous subsection, (p. 75), the project would result in the generation of 980 full-time jobs, an increase in downtown office employment of approximately 380 jobs by 1985. To the extent that the project would attract out-of-area employees and contribute to the formation of additional households by existing area residents, it would also contribute to increase local housing demand and a jobs/housing imbalance.

Probable housing impacts of additional downtown employment are discussed in the Five Fremont Center, Final EIR, (EE 80.268, Certification Date March 12, 1981), pp. 85 - 91 and the 101 Montgomery Street, Final EIR, (EE80.26, Certification Date May 7, 1981), pp. 289 - 329. These documents are available for public review at the Department of City Planning, Office of Environmental Review, 45 Hyde St., Room 319. Many people are attracted to employment opportunities in the Bay Area because wages are relatively high, but are unable to afford housing. By 1985, the projected cumulative San Francisco housing demand resulting from Downtown office development will be about 17,000 units (see Appendix C, Table C-2, p. 216). This demand would exceed the projected growth in City housing stock by an estimated 9,000 to 12,000 housing units. This demand/supply imbalance is expected to cause some downtown employees to seek housing in other Bay Area locations. Based on the assumptions documented in 101 Montgomery Street, Final EIR, that between 15 percent to 30 percent of new employees would be expected to move to San Francisco and each household would be occupied by 1.4 workers, the project would result in 40 to 80 new households in San Francisco.

Residency patterns for new employees that would be generated by the project are based on interim guidelines issued by the San Francisco Department of City Planning in "Office/Housing Production Program" (OHPP), January 1982, and by approximate residency patterns of downtown office employees surveyed for five other recent Downtown EIRs (see Appendix C, Table C-2, p. 216). It is assumed that about 40 percent of project employees are expected to reside in San Francisco, 18 percent in the Peninsula, 30 percent in the East Bay, and 12 percent in the North Bay. According to the Department of City Planning interim guidelines, the proposed project would generate a gross demand for about 208 units of housing in San Francisco. Net housing demand, obtained by subtracting the demand caused by existing commercial uses on the site from that which would be generated by the project, would be for about 85 units. The City housing formula uses the following assumptions: office use generates one employee for each 250 sq. ft., 40 percent of all employees would desire to live in San Francisco, 1.8 working adults would occupy each unit, and each employee would require an average of 400 sq. ft. of residential space. The 57 condominiums proposed would provide about 63 bedrooms and thus would

entitle the developer to 63 housing credits according to the interim OHPP guidelines (January, 1982). The sponsor would meet 75 percent of the net housing demand on-site, or about 30 percent of the gross demand. The approximate number of new households to be generated outside of San Francisco as a direct result of the project are about 40 on the Peninsula, 60 in the East Bay, and 25 in the North Bay (see Appendix C, Table C-2, p. 216).

The net amount of housing demand in San Francisco created by the proposed project would be about 1.0 percent to 1.7 percent of the City's projected housing growth from 1980 to 1985 (see Appendix C, Table C-2, p. 216). It is not possible to quantify the effects on San Francisco housing prices resulting from housing demand created by the proposed project, as housing demand and cost are also affected by regional growth in housing stock, employment, population and national economic trends.

Section 1341 of the San Francisco Subdivision Code requires provision of 10 percent low- and moderate-income housing in projects of more than 50 dwelling units, provided subsidies are available. No subsidies for such housing are presently available to developers./3/ The project would provide about 57 condominiums and would not include any low- and moderate-income housing. The sales prices of the 57 proposed condominium units, which would range from $225,000 to $270,000 each (1981 dollars), would probably be too high to qualify for low-interest financing that will be available to low- and moderate-income households under the mortgage assistance program being developed by the Mayor's Office of Community Development./3/

HOUSING AFFORDABILITY

To determine the affordability of housing in San Francisco for project employees, two major factors must be known: the household income of these workers and the price of housing. Although certain information is available from the 1980 Census, all of the data have not yet been published. Without such specific information, a variety of sources have been reviewed to project housing affordability.

Income

A survey of downtown office workers by the San Francisco Planning and Urban Renewal Association (SPUR) in 1974 does provide information on salary ranges and estimates an average annual income level of $16,300./4/ Given that the weekly earnings of nonsupervisory finance, insurance and real estate sector workers increased about 67 percent nationwide between 1974 and December 1981,/5/ inflating the $16,300 figure yields an average salary of about $27,300 for downtown office workers. Although the SPUR data have been inflated to 1982 levels, there is no way to verify that the distribution of job classifications has remained the same since 1974, nor whether actual salary levels have kept pace with or exceeded the rise in the nationwide Bureau of Labor Statistics index.

More recent published information on office workers in the Bay Area indicates that the 1980 annual salary for support and clerical personnel ranged from about $8,000 to $29,000./6/ Bay area wage information is not available for most professional occupational categories, with the exception of computer system analysts and drafters, which have mean annual salaries of $25,740 and $20,000, respectively;/6/ there are no known published data on income levels specifically for workers in San Francisco since the SPUR study. An October, 1981 survey of 60 percent of the tenants at 601 Montgomery St. revealed that about 34 percent of the office workers are professionals with salaries ranging from $21,000 to $300,000 (average $90,000); 36 percent are middle management personnel with salaries ranging from $12,000 to $70,000 (average $45,000), and 30 percent are secretarial/support workers with salaries ranging from $10,000 to $35,000 (average $19,200)./7/ Tenants of the 601 Montgomery St. building are primarily law, insurance, and professional service firms which have a larger proportion of management and professional staff than clerical staff, thus contributing to the relatively high average salary ($52,560) of this building's employees.

Without knowing the office tenants that would occupy the project, it is impossible to state with certainty the salaries of project employees. From the above information, annual salaries could range from about $8,000 to $300,000 and would probably average between $25,000 and $30,000.

Housing Supply

According to the 1980 Census of Housing, owner-occupied housing constitutes about one third of San Francisco's housing stock. The median value of this type of housing was $103,900 in 1980 and the vacancy rate was 0.6 percent. October 1981 data from the San Francisco Board of Realtors show that the average selling price of a house in San Francisco was $151,203 in 1981, and that prices ranged from $95,000 to $236,750 for homes sold in the week of October 1, 1981./8/

The 1980 Census data for rental housing shows that the median rent was $266 in San Francisco and the vacancy rate was 2.7 percent. Inflating the median rent from April 1980, the date of the census, through October 1981 would yield a median rent of $307 based on the 15 percent rise in the Consumer Price Index during that time. According to a rent survey by the Department of City Planning in 1980, median rents in the City ranged from $289 for a studio apartment to $588 for a unit with 3+ bedrooms, and averaged $455 for all types of units. However, the revised Housing Element cautions: "The data do not represent the rental stock; they (the median monthly rents) are derived from a small sample of vacant units which are advertised for rent in the San Francisco Examiner/Chronicle."/9/ Since the Census data are derived from a more extensive sample, this information may reveal a more accurate representation of rental costs than selected newspaper advertisements. Because the median was $266, the range of rental prices would be both higher and lower than this figure. While the census data reflect the entire rental stock, including residential hotel units which have lower rents than other types of rental dwellings, not all types of units would be available to new households. Stable households in the City may have occupied the same unit for many years. Lower-priced units probably are rented quickly and may not appear in newspaper advertisements.

Affordability

From the information available, it is impossible to document the income distribution of project office workers. Specific tenants for the building are not known. The survey information on income distributions contained in the

1974 SPUR study is about eight years old. The October, 1981 survey of 601 Montgomery St. tenants may not be representative of tenants of the project. Even accepting a median income of $25,000 to $30,000 for project workers, it is important to bear in mind that half would earn more and half less than this median.

Based on the available data, assumptions must be made in order to formulate conclusions regarding housing affordability. Table C-3 in Appendix C (p. 217) assumes that each household contains 1.8 project workers with the same salary and allows 30 percent of gross household income for housing. Assuming a 20 percent downpayment, 30-year mortgages, and a 16 percent interest rate, Table C-3 illustrates that most project employees would not be able to afford ownership housing in San Francisco, although as many as one third would be able to do so. Based on the assumptions stated, all project employees would be able to afford rental housing in San Francisco. These conclusions should be qualified because household circumstances vary. Housing affordability is determined not only by household income and price of housing, but also by equity in existing real estate, savings, debt, access to credit, interest rates, number of dependents, number of wage earners, tastes and preferences.

REVENUES TO CITY

The project would have a fair market value of about $69 million (in 1981 dollars)./10/ Property is now assessed at one hundred percent of fair market value. Based on the property's full assessed (or market) value, the project would generate about $690,000 in revenue to the City's General Fund from the $1 (per hundred dollars of assessed value) non-bond property tax, a net increase of about $607,000 over the non-bonded property tax revenue generated by the site in 1981.

The building would also generate property tax revenues to be used to retire bond debts. The tax rate at which these revenues would be generated in 1985 would depend on the amount of principal and interest payments due in that year and the total assessed value of property in San Francisco. The rate in 1981-82 is $0.19 per hundred dollars of assessed value. If that were still the rate in 1985, when the building would be occupied, revenues from the

building would be about $131,000, a net increase of about $115,000 above 1981 revenues.

Payroll tax is paid on the earnings of about 580 existing employees at the project site. At a rate of 1.5 percent of total earnings, payroll tax revenues presently total about $217,500/11/ Payroll taxes would be paid to the City General Fund on the earnings of approximately 900 of the 980 employees in the project. The remainder would be exempt from the tax either because they would work for banks or insurance companies (which are not required to pay San Francisco payroll taxes), because they would work for small, retail tenants with tax liabilities less than $500, or because they would be owners of businesses (who are also exempt). Based on an average wage of $25,000 for office workers, payroll tax revenues from the project would be about $337,500, a net increase of about $120,000 above existing revenues./11/

Sales tax revenues are generated by both employee expenditures and sales from the two retail stores on the site. The average office worker in downtown San Francisco is estimated to make taxable expenditures of $1,070 annually in the central business district./12/ Sales tax revenues allocated to the City and County of San Francisco are 1.25 percent of taxable sales. Sales tax revenues generated by existing uses on the project site are about $8,000 from employee expenditures and $33,000 from retail sales per year./13/ Estimated sales tax revenues generated for the City by project employees expenditures would be about $12,700, a net increase of about $4,700. Assuming $120 in taxable sales per sq. ft. of retail space, the retail uses of the site would generate about $15,000, a net decrease in City revenues of about $18,000.

The project sponsors pay a gross receipts tax on their rental income from the existing buildings on the site. Total annual rental income is about $2,078,700./10/ At a tax rate of 0.3 percent, annual gross receipts tax revenues from the existing buildings are about $6,240. The two existing retail stores also pay a gross receipts tax on annual sales volume. Based on an annual income of about $2.65 million, the tax from retail use is about $8,000 per year. Based on estimated total annual receipts from rents of about $6.2 million in 1981 dollars, tax revenues from rental income from the project (assuming full occupancy) would be about $18,600.

General Fund revenues for the City and County of San Francisco from the project would total about $1.04 million, based on the tax rates and fees in effect in late 1981. General Fund revenues from the existing uses on the site totaled about $343,000 in 1981; the project would result in about a $692,000 net increase in General Fund revenues.

MUNI

The City's General Fund provides a subsidy to the Municipal Railway's operating budget that covers the difference between Muni's costs and the revenue Muni receives from fares and from federal and state governments. This subsidy represents the cost of Muni to the City. The Muni average General Fund deficit to the City per ride in 1981-82 is estimated by Muni at $0.39 per ride./14/ Assuming that about 29 percent of the employees who occupy the existing buildings on-site ride Muni to and from work, the existing General Fund subsidy to Muni required by commuting on-site employees is about $31,760 per year./15,16/ Assuming the 1981-82 subsidy would remain the same in 1985 and that 29 percent of the project employees would ride Muni to work, the project would create the need for a General Fund subsidy to Muni of about $51,870 at 1981 costs, a net subsidy increase of about $20,110./17/

The project would help pay for the Muni deficit through its revenue contributions to the General Fund. In the 1980-81 budget, 10 percent of discretionary General Fund revenues were allocated to Muni. If this percentage were to remain constant, the project would generate around $103,500 (in 1981 dollars) in General Fund Revenues to Muni in 1985. San Francisco Board of Supervisors approved on April 27, 1981, a proposal to assess new downtown commercial development to support Muni. The plan calls for levying a one-time fee of up to $5.00 per gross sq. ft. on new downtown office space and creating a downtown district in which all commercial office owners would be assessed a yearly fee./18/ The fee plan has been challenged in court; but, if it were to go into effect as proposed, the project could generate about $1,172,500 for the one-time Muni fee. The rate of the yearly fee which would be assessed has not been determined; a new ordinance concerning the annual assessment for Muni is presently being considered by the Board of Supervisors.

BART

Sales tax revenues generated on the site by the 1/2 percent BART sales tax are presently about $16,500 a year ($13,300 from retail sales and $3,200 from employee expenditures). Of that amount, BART receives $12,375 directly, and the remaining $4,125 is distributed by the Metropolitan Transportation Commission among BART, Muni and A-C Transit. Projected sales tax revenues from the 1/2 percent BART sales tax generated by the project employees would be about $5,080 and about $6,000 would be generated from on-site retail sales, for a total of about $11,080 in revenue. Of this total, BART would receive $8,310 directly, and the remaining $2,770 would be distributed by the Metropolitan Transportation Commission. The project would result in a net decrease of about $4,065 in revenue directly to BART.

BART fares cover about 40 percent of BART costs. For each BART passenger trip an average of $1.00 is paid by fares, and an additional $1.50 in costs must be supported by some other revenue source. Over 86 percent of this additional cost is supported by the special BART 1/2 percent sales tax. It is estimated that about 15 percent of the employees who occupy the existing buildings ride BART to work./15/ The estimated annual costs to BART that are not covered by these riders' fares are $63,180./19/ BART's revenues from the sales tax and BART's share of property tax revenue from the site total about $18,700. BART's net deficit as a result of the activities at the site is estimated to be about $44,480. Assuming the 1981 deficit per rider would be the same in 1985 and that 15 percent of project employees would ride BART to work, the project would generate a deficit of about $103,200./20/ After subtracting BART's revenues from sales and property taxes which would be generated by the project, BART's net deficit would be about $42,400.

CUMULATIVE FISCAL ASPECTS

Since 1979, five studies have been prepared which have analyzed fiscal effects of development in the City's C-3-O Downtown Office District. The studies were prepared by: Recht, Hausrath and Associates, Sedway/Cooke, Gruen Gruen + Associates (GG+A), Arthur Anderson and Co., and David Jones, and are compared and discussed in the 101 Montgomery Street Final EIR, EE 80.26, pp. 189-199.

This document is available for public review at the Department of City Planning, Office of Environmental Review, 45 Hyde St. These studies differ in various ways: in the questions they ask, the data sources they use, the methodologies they employ, and the conclusions they draw. Table 6, p. 86, compares the purpose, study methodology, and conclusions of the five studies.

The project would probably have an initial fiscal benefit. Because revenues to the City would probably increase at a slower rate than costs, due to Proposition 13 limitations on property tax increases, there would be a time when cumulative costs of providing services to currently proposed and approved development would be higher than revenues provided (assuming no new revenue sources are found and the rate of new development declines).

Proposition 13 limits the amount of increased assessed valuation on property, in the years in which the property is not sold, to 2 percent annually. When a property is resold, it can be reassessed based on its market value. As private homes change ownership more often than commercial or office property /21/, the property tax revenues from the residential portion of the project would increase at a faster rate than the property taxes from the other uses.

NOTES - Employment, Housing and Fiscal Factors

/1/ Projections are based on the Bay Area Input-Output Model from Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974, July 1978. A multiplier of 1.2 was used for FIRE and 1.6 for construction.

/2/ ABAG, April 1981, Bay Area Office Growth, Working Papers on the Region's Economy, Number One.

/3/ B. Smith, Housing Specialist, Office of Community Development, telephone communication, February 17, and March 18, 1982.

/4/ San Francisco Planning and Urban Renewal Association (SPUR), Impact of Intensive High Rise Development in San Francisco, Detailed Findings, June, 1975.

/5/ Data are inflated by about 67 percent, the national average percentage increase in weekly earnings of nonsupervisory finance, insurance and real estate employees between 1974 and the end of 1981 (U.S. Bureau of Labor Statistics, Monthly Labor Review, June 1975 and February 1982).

TABLE 6: SUMMARY OF RECENT STUDIES ON FISCAL IMPACT OF DOWNTOWN DEVELOPMENT

STUDY, AUTHOR, DATE	PURPOSE OF STUDY	DATA SOURCES	STUDY METHODOLOGY	CONCLUSIONS
"Fiscal Concerns" in Downtown San Francisco Conservation and Development Planning Program, Phase I Study, Sedway/Cooke, et al., October 1979, pp. 56-59	To qualitatively assess the likely fiscal impact of new development in the C-3 area under Proposition O.	SPUR STUDY (1975)	SPUR cost/revenue estimates for downtown in 1973 and for projected growth 1974-1990 were assumed. Proposition 13's effect on revenues and the possible need for increased transportation infrastructure were considered. Generalized conclusions about fiscal impact of new development were drawn.	1) After Proposition 13, "costs may exceed revenues in the downtown by as much as 25%." 2) "[N]ew downtown development will not solve the city's growing fiscal problem; without new revenue sources, development will make it worse in the long run."
Downtown Highrise District Cost Revenue Study, Arthur Andersen & Co., November 1980	To quantify for 1976-77 and 1978-79 how much revenue the C-3-O area generated and how much it costs to provide city services to the area.	Data compiled from city records and through conversations with city officials.	Only revenues generated within the C-3-O and costs of providing services to the C-3-O counted. "The principle guiding the study methodology was to calculate the amount of revenue that San Francisco would lose and the costs that could be reduced if the Downtown Highrise District were a separate city."	The C-3-O generated $56.79 million in 1976-77, or 61% more than the cost of city services to the area. In 1978-79, revenues were $53.29 million, or 48% greater than costs.
"Fiscal Considerations" Appendix C, 101 Montgomery Street FEIR, Recht Hausrath & Associates, January 1981.	To draw generalized conclusions about "how new development downtown in a post-Proposition 13 environment is likely to change the City's fiscal health from what it would be without new development."	SPUR Study, city records and conversations with city officials.	Under alternative assumptions about the cost/revenue balance in existing buildings and in new buildings, the fiscal impact over time of new development was compared to that of no new development.	"[A]n on-going process of new development would improve the City's fiscal situation. This beneficial impact would cease if new development were haulted. This conclusion is tentative due to uncertainties about increased Muni costs."
Downtown Highrise District Cost/Revenue Study, David Jones, February 1981.	To quantify for 1978-79 the revenues generated by businesses in the C-3-O and the service costs imposed on the city and BART by the C-3-O.	Arthur Andersen study.	The Jones study differs from the Andersen study primarily as follows: 1) Costs of BART (but not revenues to BART) are included; 2) Only revenues paid by businesses and building owners are considered; 3) Muni deficit is computed differently; 4) Most costs are estimated as a percentage of revenues rather than on the basis of actual service demand in the C-3-O.	The C-3-O imposed costs of $94.4 million on San Francisco and BART, or 125% more than the revenues the area's businesses and building owners generated to San Francisco.
Fiscal Impacts of New Downtown High-Rises on the City and County of San Francisco, Gruen Gruen + Associates March 1981	To quantitatively estimate city revenues from the C-3-O and costs of serving the C-3-O in 1998, assuming the addition of 30 million square feet of building space in the C-3-O between 1981 and 1998.	Arthur Andersen study; data compiled from city records and through conversations with city officials.	"Only direct effects are considered." Costs are only measured for services "provided within the physical limits of the C-3-O district" and revenues are limited to "taxes on buildings within the district and the activities that take place within those buildings." Assumes the Arthur Andersen study is accurate and builds upon it.	In 1980, revenues from the 39 million square feet of building space in C-3-O were 1.66 times as large as costs. In 1998, after completion of the 30 million square feet of new space, revenues from the entire 69 million square feet of C-3-O building space would increase to 1.92 times as large as costs.

SOURCE: Recht, Hausrath and Associates, January 1981.

/6/ U.S. Department of Labor Statistics, "Area Wage Survey for the San Francisco - Oakland, CA, Metropolitan Area," March, 1981.

/7/ Lynn S. Flach, Trammell Crow Company, written communication, November 6, 1981.

/8/ San Francisco Board of Realtors, "Multiple Sales Service," October 5, 1981. This information includes all homes sold from February 11, 1981 to October 1, 1981.

/9/ San Francisco Department of City Planning, Proposed Revision of the Residence Element of the Comprehensive Plan, January, 1982.

/10/ Kwan So, Honorway Investment Corp., letter communication, October 8, 1981.

/11/ Downtown office workers are assummed to have an average annual salary of about $25,000 (see discussion of Housing Affordability - Income, p. 79).

/12/ Taxable expenditures within the central business district per office worker were $715 per year in 1974 (SPUR, 1975, see note /9/ above). Between 1974 and 1981, average weekly earnings of finance, insurance, real estate and service workers rose nationally about 50 percent: 1.50 x $715 = $1072.

/13/ Sales tax revenues generated by employees at the existing project site are about $8,040 per year (600 employees x $1,072 taxable sales per employee x 1.25 percent). Based on gross receipts of $2.65 million for the existing retail store and a tax rate of 1.25 percent, on-site retail sales generated about $33,125 per year for the City and County of San Francisco.

/14/ Bruce Bernard, Muni Chief Accountant, telephone communication, December 28, 1981. Based on 1981-82 Muni additional cost per ride (i.e. marginal cost) of $0.71 and average fare revenue per trip of $0.32.

/15/ Office of Environmental Review (OER), "Guidelines for Environmental Evaluation - Transportation Impacts", October 1980.

/16/ Assuming 260 work days per year, two rides per day and absenteeism of 10 percent (holidays, vacations, sick days), each worker will ride an estimated 468 times per year. Therefore, the cost is: 600 workers x 29 percent ride Muni x 468 rides per year x $0.39 deficit per ride = $31,760.

/17/ 980 workers x 29 percent ride Muni x 468 rides per year x $0.39 deficit per ride = $51,870 total subsidy to Muni due to project. $51,870 - $31,760 = $20,110 net increase in subsidy to Muni due to project.

/18/ San Francisco Ordinance No. 224-81, approved by the Board of Supervisors on April 20, 1981.

/19/ 600 workers x 15 percent ride BART x 468 rides per year x $1.50 cost per ride = $63,180.

/20/ 980 workers x 15 percent ride BART x 468 rides per year x $1.50 cost per ride = $103,200.

/21/ H. McKenzie, Assistant Chief Appraiser, San Francisco Assessor's Office, telephone conversation, February 17, 1982.

D. TRANSPORTATION

DEMOLITION, EXCAVATION AND CONSTRUCTION

During the 20 month construction period, transportation impacts would result from truck movements to and from the site during demolition, excavation and construction activity. Demolition and excavation would require about two months and one month, respectively. Trucks are expected to follow haul routes approved by the Department of Public Works, probably via Front and Clay Sts. to the Embarcadero and James Lick Freeways to Peninsula disposal sites; return trips would probably by via Washington, Battery and Davis Sts. Post-excavation construction activity would require truck movements to deliver construction materials.

Any truck traffic from 7:00 a.m. to 9:00 a.m. or from 4:00 p.m. to 6:00 p.m. would conflict with peak-hour traffic, particularly at freeway access points. Site access would probably be via Pine and Front Sts. Materials storage would be provided on site. Sidewalks on the east side of Front St. and south side of Pine St. would be closed for the construction period. The parking lanes on these streets would be closed to allow pedestrian travel under covered walkways in the streets. This would result in decreased capacity of traffic lanes during peak hours and would contribute to congestion. A portion of the sidewalk on the north side of Market St. would also be closed during construction. It is anticipated that pedestrian travel would be allowed on the remaining sidewalk width and that the traffic lanes on Market St. would not be affected by construction.

PROJECTED TRAVEL DEMAND

The transportation analysis covers the time period of 4:30 - 5:30 p.m. for peak-hour effects of project and cumulative development on transportation systems serving the downtown area. The p.m. peak hour is used because the capacity relative to demand is less than during the a.m. peak and the effect on congestion of additional demand created by projects is highest.

The proposed project would generate approximately 1,000 gross person trips during the p.m. peak hour (about 900 office, 65 retail and 40 residential). Because existing office and retail uses on the site generate an estimated 580 peak-hour person trips, the net number of peak-hour project trips would be about 425. Table 7 shows the projected travel demand by travel mode. Trip assignments are based on the modal splits recommended by the Office of Environmental Review./1/ During the peak hour, 90 percent of downtown person trips are to or from work and incorporate both work and non-work trips./2/

All developments currently proposed or under construction within 2,000 ft. of the site would generate about 41,000 total cumulative p.m. peak-hour person trips by 1984 (see Appendix D, Table D-5, p. 225, for a list of buildings considered in the cumulative analysis of local vehicular traffic, transit and pedestrian effects). Peak-hour person trips from the project would represent about 2.4 percent of the cumulative p.m. peak-hour trips. Cumulative development within 2,000 ft. of the site would generate about 227,000 daily person trips, of which about 4,300, or about two percent, would be the net increase from the project. Table D-2, p. 222, in Appendix D shows daily person trips by mode.

Almost four percent of the floor area proposed in new downtown development is residential. As a result, travel demand generated by retail and office space would probably be reduced since some related commute trips would be intra-City.

Table 8, p. 92, shows p.m. person trips and modal splits for cumulative development within 2,000 ft. of the site. Table 8 compares trip assignments based on the modal splits recommended by the Office of Environmental Review and an approximation of the future transit modal split due to limitations on

automobile use. The present proportion of persons traveling by each mode will change in the future. Factors that will result in mode shifts will be congestion (Level of Service F) on major routes into the City (see Appendix D, Table D-1 for definitions of vehicular levels of service), "transit first" transportation policies, rising fuel costs and insufficient parking. (The parking situation is discussed below, p. 97.)

TABLE 7: PROJECTED PERSON TRIPS DURING THE P.M. PEAK HOUR BY MODE FOR THE PROPOSED PROJECT

	Percent of Person Trips by Mode *	Person Trips		Auto Trips **	
		Net Project	Gross Project	Net Project	Gross Project
Auto:					
San Francisco	13	55	130	40	100
East Bay	9	35	85	25	60
Peninsula	8	30	70	20	45
North Bay	6	30	70	20	45
Auto Total	36	150	355	105	250
Transit:					
Muni	28.8	115	275		
BART	15.1	60	140		
AC	8.4	35	80		
SamTrans	1.5	10	25		
SPRR	4.4	20	50		
GGT (Bus)	4.6	20	50		
GGT (Ferry)	1.4	0	0		
Transit Total	64.2	260	620		
Other	2.4	20	50		
Total, with Muni transfers from other modes	102.6 %	430	1025		
Total, without Muni transfers	100 %	420	1000		

*Office of Environmental Review, Guidelines for Environmental Evaluation - Transportation Impacts, October 1980.
**Auto-trips = auto person trips/1.4 passenger trips per auto trip.
SOURCE: Environmental Science Associates, Inc.

The future modal split shown in Table 8 does not apply strictly to the new projects because many of the new commuters from these projects who wish to travel by automobile would be able to obtain access via the freeway and find public parking spaces. However, in doing so, they would displace others who would then use transit. Therefore, concurrent with, and principally due to, the new travel demand created by these projects, there would be a general shift to public transit use from automobile use downtown.

About 8.7 million gross sq. ft. of office space is approved or under construction in the City (see Table C-1, p. 214). This growth would increase demand for travel in the City during the p.m. peak hour by about 27,400 person trips. Based upon guidelines for projecting existing transportation patterns, approximately 9,900 of these trips would occur by automobile, about 7,900 would occur on Muni, and the remainder would be accommodated by other transit agencies./1/ Because the present proportion of persons traveling by each mode will change in the future, for the reasons discussed above, most of this City-wide peak-hour increase would be accommodated by some means other than automobile traffic, such as public transit or ridersharing.

TRANSIT

Muni

Due to restrictions on automobile use which will result in a transportation mode-shift, new Muni patronage attributable to the project, would be an estimated 180 net trips during the p.m. peak hour, about one percent of the 18,200 Muni trips generated by cumulative development within 2,000 ft. of the site by 1985. In the 1981 Muni Five-Year Plan, outbound peak capacity in 1985 from the Central Business District is projected to increase by 11,000 passengers from approximately 42,000, to a total of 53,000. The additional peak-hour passenger volume in 1985 would exceed added capacity by about 7,200. The project would require less than one percent of p.m. peak-hour Muni capacity.

TABLE 8: PROJECTED PERSON TRIPS DURING THE P.M. PEAK HOUR BY MODE FROM CUMULATIVE DEVELOPMENT WITHIN 2,000 FT. OF THE SITE.*

	Percent of Person Trips by Mode per Guidelines**	Cumulative Person Trips	Percent of Person Trips, Approximate Effective Modal Split***	Cumulative Person Trips
Auto:				
San Francisco	13	5,320		
East Bay	9	3,690		
Peninsula	8	3,280		
North Bay	6	2,460		
Auto Total	36	14,750		
Transit:				
Muni	28.8	11,800	45	18,200
BART	15.1	6,180	23	9,540
AC	8.4	3,440	13	5,280
SamTrans	1.5	610	2	940
SPRR	4.4	1,800	7	2,780
GGT (Bus)	4.6	1,890	7	2,910
GGT (Ferry)	1.4	570	2	900
Transit Total	64.2	26,290	99	40,550
Others	2.4	980	3.6	1,520
Total, with Muni transfers from other modes	102.6	42,020	102.6	42,070
Total, without Muni transfers	100.0	40,950 ****	100.0	41,000 ****

* Projected person trips for cumulative development are based on project size (square footage).
** Office of Environmental Review, Guidelines for Environmental Evaluation - Transportation Impacts, October 1980.
*** Approximate future transit modal split due to limitations on automobile use; these estimates are numerically consistent with the San Francisco Municipal Railway, Five-Year Plan: 1981-86.
**** The discrepancy between total transit trips reported in this table is due to rounding, and a projected increase in multi-mode trips.

SOURCE: Environmental Science Associates

The 39 Muni lines with stops within 2,000 feet of the site were carrying about 26,700 peak-hour trips in 1980./4/ New Muni patronage attributable to the project and other development not included in the projection would increase total patronage about 70 percent to 44,300 by 1985. All but four of the 39 lines would have peak-hour volume increases greater than 200 passengers. The K line would gain over 2,000 peak-hour passengers.

BART

The BART system is currently operating at about 130 percent of its p.m. peak-hour seated transbay capacity of 11,200 passengers. It is anticipated that ridership and capacity will increase by about 30 percent over the next five years. The planned capacity increase is contingent upon capital improvements, including the laying of new tracks at locations in Oakland and at the Daly City turnback./4/

A-C Transit

A-C Transit carries about 7,800 passengers, 100 percent of seated capacity, during the p.m. peak-hour./5/ Individual routes or buses may operate at higher load factors. Cumulative downtown development is projected to generate about 5,280 additional A-C Transit passenger trips during the p.m. peak-hour. Without an increase in capacity, demand would exceed seated capacity by about 70 percent in 1984.

SamTrans

SamTrans operates nine routes serving the downtown area during the p.m. peak hour, carrying about 1,200 passengers at 100 percent of seated capacity./6/ Cumulative downtown development would increase ridership by about 940 in 1985. SamTrans will give priority to its commute service to meet demand as the need arises./6/

Southern Pacific Transportation Company

Southern Pacific Transportation Company (SPTC) carries 5,500 passengers, 83 percent of capacity, during the p.m. peak hour, based on a capacity of 6,600 passengers. SPTC and Caltrans plan to increase capacity in 1983 by 50 percent to almost 10,000 passengers./7/ New downtown development would generate 2,780 additional peak-hour passengers by 1985, maintaining peak-hour patronage at about 83 percent of the increased capacity.

Golden Gate Transit

Buses serving Marin and Sonoma Counties now carry 10,000 peak-hour passengers at about 90 percent of seated capacity./8/ The increase of about 2,910 passenger-trips from cumulative downtown development would cause demand to exceed supply by about 29 percent.

The two ferries operating during the peak hour have a combined seated capacity of 1,470 passengers and carry 1,100, or 75 percent of seated capacity. By 1984, the demand for peak-hour service would increase to 2,000, or 136 percent of seated capacity. The maximum allowed ridership on the Sausalito and Larkspur ferries are about 130 and 150 percent of seated capacity, respectively./8/ If some of the ferry service were discontinued, these trips would occur by bus or automobile. Golden Gate Transit plans to acquire 72 additional buses by 1985, capable of carrying a total of 3,530 seated passengers. This additional service would accommodate all projected growth in agency patronage and some reduction of ferry service.

RIDES For Bay Area Commuters

The number of daily person trips made in van pools in the Bay Area is approximately 3,500./9/ The RIDES program leases vans as needed for user groups. Funding, except for administrative costs, is entirely by users./9/

PEDESTRIANS

A public pedestrian gallery through the proposed building would connect the Market St. and Pine St. sidewalks (see Figure 3, p. 12). There would also be direct pedestrian access to the Embarcadero Station of the Market St. subway from the lower basement level of the project. The design of the building would feature rounded corners and recessed doorways to the public gallery. The recessed doorway design would allow pedestrians to stand out of the way of the Market St. or Pine St. sidewalks.

The project would increase p.m. peak-hour pedestrian traffic on sidewalks around the block by 1-4 pedestrians per minute per foot of effective sidewalk width (existing flows are 10-40 pedestrians per minute). Pedestrian trips from other developments, planned for completion by 1984 within a 2,000-foot walking distance of the site, would increase pedestrian traffic on sidewalks around the project block by 100-200 percent.

The Front St. sidewalk would become the most congested of the sidewalks around the block where pedestrians would move at the rate of about 90 per minute, principally in the southbound direction. The sidewalk would be operating during the peak hour at about 50 percent of capacity. Under such conditions pedestrians have a partially restricted choice of walking speed and pass each other with difficulty, but maintain an average speed which is at least 80 percent of that of free flow. The south crosswalks at the intersection of Pine and Front Sts. would operate at about 85 percent of capacity. Other sidewalks and crosswalks in the area would operate under better conditions, with no notable delays occurring due to crowding./10/

The project would create two new curb cuts on Front St., an 11-ft. cut for a single lane in-and out-ramp to the 47-space basement parking garage, and a 26-ft. curb cut for two truck or service vehicle loading spaces (see Figure 4, p. 13). The curb cuts would be separated by a distance of six and one-half ft. Each of the loading spaces would typically be used two or three times per hour. During peak hours there would be about one vehicle trip in or out of the garage every minute. Since pedestrians would be passing at a rate

of more than one per second, there would be conflicts on the sidewalk between pedestrian and vehicles which would delay both, but particularly the vehicles.

The Pine St. end of the pedestrian gallery of the proposed building would be situated directly across the street from an entrance to the lobby of 101 California St., now under construction. About 3,500 pedestrian trips would be directed toward Market St. from this building during the p.m. peak-hour. While most of these trips would be made from other exit points of the building and across Pine St. in crosswalks at intersections, many would cross Pine St. at mid-block, about 100 ft. from an intersection. This condition would be encouraged by the existence of the pedestrian gallery in the proposed 388 Market St. building. Pedestrians would be crossing two traffic lanes and two curb lanes of Pine St., a one-way street carrying about 500 vehicles per hour during the p.m. peak-hour, and would be afforded some "crossing protection" by the traffic signal at the upstream intersection at Market St.

VEHICLES

Because no stopping is allowed on Market St. at the project site, access to the building would be from Pine or Front Sts. at curbside, or by use of the loading docks or ramp to the basement parking garage on Front St. The net increase in vehicle trips to the project block, during peak hours, would be about 75. Of this total, an estimated 30-50 of the trips would include left turns from Front St. onto Pine St., a maneuver which would be made within a distance of about 80 ft. from the parking garage out-ramp to the Pine St. intersection. The left-turn lane now backs up during peak-hours, and will back up more as other developments in the area increase pedestrian traffic in the west crosswalk across Pine St. at the intersection. The maneuver for vehicles exiting the project parking ramp and turning left on Pine St. may be made awkwardly, at a sharp angle to the traffic flow. Pedestrian/vehicle conflicts could be reduced by modification of the traffic signalization at this intersection, if such action were determined appropriate by the Department of Public Works. Vehicle trips to the project garage or to the loading docks would be delayed in crossing the busy sidewalk on Front St., where pedestrians would be passing at a rate of 90 per minute.

Except for operating conditions associated with the left-turn movement onto Pine St., the project trips would not result in a noticeable change in service levels at any intersections. However, other developments planned for completion by 1984 within 2000 ft. of the site (see Appendix D, Table D-5) would increase peak-hour traffic on streets serving the project trips by about 10 percent. Traffic would still flow freely, except where increased pedestrian traffic in crosswalks would impede turning movements at intersections as noted above.

Front St., between California and Sacramento Sts., has been identified as a potential lunchtime mall which would have restricted vehicular traffic./11/ This proposal, which would occur in three phases, has not been formally adopted by the Department of City Planning. If such a mall were developed, however, the number of turning movements would be increased at California and Sansome Sts. and at California and Drumm Sts., the closest northbound streets to Front St. There is sufficient capacity at mid-day so that the vehicles diverted from Front St. over the several nearby streets would not cause increased congestion./11/ Development of a noontime pedestrian mall on Front St. at the proposed location would not affect operating conditions at the intersection of Front and Pine Sts.

PARKING

About 47 parking spaces would be provided in two basement levels accessible via a single lane ramp from Front St. (see Figure 3, p. 12). The parking ramp would be controlled by vehicle-actuated signals which would give priority to outbound vehicles. Vehicles would enter or leave the garage about once every three minutes during the peak hour. Conflicts between inbound and outbound vehicles would therefore be infrequent and would be resolved within a minute or two. Inbound vehicles encountering outbound vehicles would be stopped briefly on Front St. and would principally be delayed in accessing the garage by conflicts with sidewalk pedestrian traffic. Conflicts between pedestrians in the Front St. sidewalk and vehicles in the ramp curb cut would be the same as for a two lane ramp design, as the number of garage parking spaces generating vehicle trips would be the same.

The proposed building would create a gross parking demand for about 345 long-term parking spaces, and 65 short-term spaces. The project sponsor proposes to designate 37 of the 47 proposed parking spaces to serve the 57 condominium units; about ten spaces would be short term parking for the commercial portion of the building. Overall there would be a deficit of about 365 spaces.

That the project would not meet the demand created for long-term parking is consistent with the overall policy contained in the Revisions to the Transportation Element of the Master Plan, to discourage additional long-term parking spaces in the downtown "core" area. (No parking is required by the City Planning Code for office uses in the C-3-O District.)

Because demand exceeds supply at all the garages and at curbside within walking distance of the site, there can be no increase in the number of vehicles parked in the project vicinity off-site. Therefore, the effect of the project would be to displace some commuters from automobile use to transit. This effect has been discussed in the Projected Travel Demand section of this report (pp. 89 - 92), and is implicit in other analyses dependent upon trip generation assumptions.

TRUCKS AND SERVICE VEHICLES

Truck and service-vehicle loading for existing uses on the site is conducted at an enclosed dock on Pine St., and at curbside on both Pine and Front Sts. The proposed building would have a loading dock at street level on Front St. with two stalls, each 10 ft. wide; one stall would be 35 ft. deep and the other would be 25 ft. deep. The off-street loading plan would be consistent with the requirements of Section 154 (b) of the City Planning Code. While the number of loading spaces would conform to the requirements of City Planning Commission Resolution No. 9286, the proposed dimensions would not meet the new loading dock requirements of 35 ft. deep and of 12 ft. wide for each stall. /12/ Some unloading would occur at the curb on Front and Pine Sts. in the existing loading zones there, particularly for deliveries to the ground floor retail space, which would not have access from the loading dock.

There would be about 60 truck and service vehicles stopping per day, or about seven per hour. With a typical loading period of about 25 minutes, there would be an average hourly demand for three loading spaces. Some loading, therefore, would occur at curbside; there is no provision in the building's design for a dolly ramp between the loading zones and the sidewalk.

During peak hours about 90 pedestrians per minute would pass the site on the Front St. sidewalk. Conflicts would occur between these pedestrians and trucks in docking manuevers, and would result in momentary delays for both. Most single-unit trucks could be docked in the 35-ft.-deep stall without extending beyond the property line and affecting the sidewalk, as could many such trucks in the 25 ft. deep stall. Very large single-unit trucks would block a few feet (less than 5 ft.) of the sidewalk, and tractor-trailer rigs would block the entire sidewalk if docked. This would occur rarely, as with moving vans.

NOTES - Transportation

/1/ OER recommends use of these modal splits in the Guidelines for Environmental Evaluation - Transportation Impacts, October 1980, when a building-specific determination has not been made.

/2/ Trip generation rates by floor area, for various uses, have been compiled by the Department of City Planning in Guidelines for Environmental Evaluation - Transportation Impacts," October 1980. Additional trip generation rates are contained in Caltrans, Trip Ends Generation Research Counts, Volumes 1-11, 1971-77. Office space, retail space, and residential space are estimated to generate, respectively, 17.5, 80 and 7 daily person trips per 1,000 rentable square feet. Twenty percent of daily office trips, 10 percent of daily retail trips and 10 percent of daily residential trips are assumed to occur during the p.m. peak hour.

/3/ The 39 affected Muni lines are 1/55, 1X, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 14, 14GL, 14X, 15, 17X, 21, 27, 30, 30X, 31, 31X, 32, 38, 38L, 38AX, 38BX, 40X, 42, 45, 47, 80X, J, K, L, M and N.

/4/ Marty Birkenthal, Transportation Planner, BART, telephone communication, November 13, 1981.

/5/ Ted Reynolds, Senior Planner, A-C Transit, telephone communication, March 19, 1982.

/6/ George Kipp, Transportation Planner, San Mateo Transit District, telephone communication, November 5, 1981.

/7/ San Francisco City Planning Commission, Final Environmental Impact Report, One Sansome Building, April 10, 1981, Section IV., page 95.

/8/ Allen Cahradnik, Senior Planner, Golden Gate Transit, telephone communications, December 11, 1981 and March 29, 1982.

/9/ Frank Harris, Operations Manager, RIDES for Bay Area Commuters, Inc., telephone communication, October 2, 1981.

/10/ Capacity analysis based on Table 3.6 in Urban Space for Pedestrians, by Boris Pushkarev and Jeffery Zupan.

/11/ Wilbur Smith and Associates, Center City Circulation and Goods Movement Study, prepared for the San Francisco Transportation Policy Group, September 1980.

/12/ City Planning Commission Resolution 9286, Exhibit A, "Off-Street Freight Loading and Service Vehicle Space Requirement and Guidelines," adopted January 21, 1982.

E. AIR QUALITY

LOCAL EFFECTS

Cumulative and project effects on sidewalk carbon monoxide (CO) levels at Pine and Market Sts. were calculated for 1985 using peak-hour traffic volumes according to methods recommended by the Bay Area Air Quality Mangement District (BAAQMD); results are shown in Table 9, p. 101. Project-generated traffic would contribute no more than 0.3 parts per million (ppm) to the eight-hour and one-hour CO concentrations in the project vicinity and would cause no violations of standards.

As indicated in Table 9, no violations of standards would be expected to occur in 1985. Concentrations in 1985 would be less than in 1981 because Federal and State mandated increased auto-emissions control measures during this period would more than offset increased traffic volume.

TABLE 9: PROJECTED WORST-CASE CUMULATIVE SIDEWALK CARBON MONOXIDE CONCENTRATION IMPACTS AT STREETS NEAR THE PROJECT*

	Existing 1981	Cumulative Development 1985	Without Project 1985
	(in parts per million)		
1-Hr. Concentration (1-hr. standard = 35 ppm)			
Ambient level	13.3	9.9	9.9
Market Street	17.7	13.1	12.8
Pine Street	15.8	11.7	11.6
8-Hr. Concentration (8-hr. standard = 9 ppm)			
Ambient level	7.9	5.7	5.7
Market Street	9.0	6.6	6.5
Pine Street	8.5	6.2	6.1

*Concentrations at the sidewalk adjacent to the most-heavily traveled roadway segment were calculated according to the BAAQMD Guidelines for Air Quality Impact Analysis of Projects, 1975, updated with 1981 ARB EMFAC6 emission factors; worst-case meteorology and roadway configuration are assumed. The ambient or background level in 1981 was calculated as the three-year average of the second highest annual concentrations. The background level was the 1981 value adjusted to 1985 according to the regional emission projected for those years by the 1979 Bay Area Air Quality Plan.

SOURCE: Environmental Science Associates, Inc.

The California standard for airborne lead particles is a monthly average of 1.5 microgragms per cubic meter (ug/m^3) and the federal standard is a quarterly average of 1.5 ug/m^3. The federal standard has not been violated and the state standard has been violated twice since 1978 in San Francisco. In 1980, the highest mean monthly concentration of lead in San Francisco was 0.90 ug/m^3./1/

The major source of atmospheric lead is gasoline used in motor vehicles. Although traffic generated by the project would increase exhaust emissions in proportion to vehicle miles traveled, overall ambient lead concentrations are expected to decrease in the future as the use of unleaded gasoline increases.

REGIONAL

Project-related emissions would arise from vehicle trips, building operations and space and water heating. Transportation sources would account for over 95 percent of the project-related CO emissions.

Project-related emissions would result in an increase of less than 0.03 percent over existing emissions in the San Francisco Bay Area Air Basin. Table 10 shows annual project-related emissions, emissions related to cumulative development, and regional emission levels of hydrocarbons and nitrogen oxides, which are precursors of ozone, in 1984. Neither the project nor other development in the vicinity would conflict directly with the control strategies of the Bay Area Air Quality Plan.

TABLE 10: 1984 ANNUAL POLLUTANT EMISSIONS (tons per year)

Pollutant	Project	Cumulative Development	Regional
Carbon Monoxide	500	53,000	1,464,000
Hydrocarbons	40	4,600	292,000
Nitrogen Dioxide	90	8,700	252,000

SOURCE: Environmental Science Associates, Inc.

NOTE - Air Quality

/1/ 1978, 1979 and 1980 California Air Quality Data Summaries, California Air Resources Board.

F. CONSTRUCTION NOISE

Project construction would occur in three stages: demolition, excavation and construction of the new building. Throughout the 20-month construction period, trucks would be visiting the site, initially hauling away dirt and debris and then bringing materials. These activities would temporarily increase noise levels in the surrounding area.

During construction all powered equipment, with the exception of impact tools, would have to comply with the San Francisco Noise Ordinance requirement of a sound level not more than 80 dBA at 100 feet. The ordinance prohibits construction work from 8 p.m. to 7 a.m., if noise emissions from such work exceed the ambient noise level by 5 dBA at the property line, unless a special permit is authorized by the San Francisco Department of Public Works. During construction, many types of equipment are used. Typical demolition and construction noise levels anticipated for this project are shown in Table 11.

TABLE 11: TYPICAL OFFICE BUILDING CONSTRUCTION NOISE LEVELS AT 50 FEET.

Construction Phase	Average Noise Level
Ground Clearing	84 dBA
Excavation	89
Foundation	78
Erection	87
Finishing	89

SOURCE: D.N. May, Ph. D., 1978, Handbook of Noise Assessment, Van Nostrand Reinhold Environmental Engineering Series, p. 211.

During the 12 weeks of demolition and excavation and 32 weeks of exterior finishing, noise levels in the lower floors of the 101 California St. base building, the 444 Market St., 111 Pine St., and Pacific Gas and Electric (PG&E) buildings would be expected to rise as high as 65 dBA. Ambient noise at this level would require raised voices to communicate at distances greater than six ft., and would be distracting to workers in these buildings.

Project construction would require about four weeks of foundation piledriving. Conventional unmuffled and unshielded pile drivers emit noise levels of 105 dBA at a distance of 50 ft. each time the driver strikes the pile. The quietest impact piledriver measured by the City generates noise levels of 90 dBA at 50 ft., but is not always compatible with construction requirements. The Department of Public Works requires "state of the art"

noise control devices during construction. All building construction, however, exceeds the Noise Ordinace standard of 80 dBA at 100 ft. during piledriving.

The lowest dBA level achieved during piledriving is in the high 80's at a distance of about 100 ft. Actual noise emmisions are dependent upon soil characteristics and the type of piles used. The Department of Public Works analyzes the impacts of piledriving for every building and frequently requires staggered hours for piledriving. The most frequent requirement in commercial areas is to limit piledriving from 1 p.m. to 9 p.m. All noise control measures imposed by the Department are negotiable and are subject to revision during construction should circumstances require new action./1/

Assuming noise emissions of 105 dBA at 50 ft., piledriving would be audible to people on streets within 1,000 ft. of the project site where not shielded by intervening buildings. Noise levels would reach as high as 75 dBA in the lower floors of the 101 California base building, the 444 Market St., 111 Pine St. and the PG&E buildings. Intermittent noise intrusions from piledriving would require raised voices at two ft., and shouting at 12 ft., in order to communicate. Repeated intermittent sounds of a high noise level appear to be more likely to disrupt performance than continous or steady sounds of a comparable level./2/

Physiological responses suggestive of a general stress reaction have been shown to occur at noise levels far below those which result in hearing damage./3/ Observations in humans have shown that responses to brief sounds over about 70 dBA include general constriction in the peripheral blood vessels, reduction of peripheral blood flow, and changes in heart rate, breathing patterns, gastro-intestinal secreations, and the size of pupils./4/ General psychological distress produced by noise can contribute to other stress and in this way contribute to the incidence of nonauditory disease./4/ Permanent nonauditory effects of temporary exposure to high noise levels have not been well documented. The effects described above would likely occur for the period of noise exposure. It has been shown, in monkeys, that exposure to typical industrial noise levels for a period of nine months

results in pronounced (greater than 20 percent) and lasting blood pressure increases./5/ Despite some inconsistencies in the studies, environmental noise has been associated with increased incidence of cardiovascular disease./3/ Intermittant noise, such as that produced by piledriving, may reduce an individual's perception of control of the environment frequently resulting in depressed moods and motivation./3/ In general, disease tends to be more prevalent among persons exposed to unpredictable or intermittent sound, in comparison to periodic or continuous noise./3/

NOTES - Noise

/1/ Ray McDonald, Chief Building Inspector, Bureau of Building Inspection, Department of Public Works, July 6, 1981, telephone communication.

/2/ U.S., Department of Health, Education and Welfare, Health Services and Mental Health Administration, Occupational Exposure to Noise, 1972.

/3/ Sheldon, Cohen, et. al., "Cardiovascular and Behavioral Effects of Community Noise, "American Scientist, Volume 69, September-October 1981.

/4/ Central Institute for the Deaf, Effects of Noise on People, for the U.S. Environmental Protection Agency, 1971.

/5/ Peterson, E.A., et. al., "Noise Raises Blood Pressure without Impairing Auditory Sensitivity," Science Volume 211, March 27, 1981.

G. ENERGY

During the construction period, an estimated energy consumption of about 526 billion (Btu) at-source would be required./1/ This value is equivalent to about 89,000 barrels of oil (bbl/oil) and includes the energy required for fabrication and distribution of materials, as well as direct energy consumption. Direct energy consumption at the site would represent approximately 18 percent of total construction energy consumption. An estimated 92 billion Btu at-source (16,000 bbl/oil equivalents) would be consumed for site excavation, transportation of materials and building construction, including on-site gasoline and electrical consumption.

A state computer program has not yet been carried out to determine precise energy consumption characteristics for the project. Based on results of a State-approved energy analysis program, for a project of similar location, size and design, it has been estimated that the proposed building would consume approximately 111,900 Btu at-source per sq. ft. per year. This value is about 10 percent lower than the State standard of 126,000 Btu at-source per sq. ft. per year./2/ A state computer program would be carried out for the project to show compliance with Title 24 of the California Administrative Code, prior to issuance of a building permit.

The ventilation system would be a variable-air-volume air-conditioning system providing individual zone control and would use outside-air/return-air damper economizer controls to permit the use of 100 percent outside air for cooling when the outside air was of a desirable temperature. This would reduce the air-conditioning requirements of the structure. Heating would be provided by a natural-gas-fired boiler and a fuel-oil backup. The air-conditioning system would be a central centrifugal water chilling system. The project design would also include a computer-based building automation system including temperature controls and energy monitoring functions. Projected energy consumption is shown in Table 12.

The project would have a connected kilowatt load of about 7,025 kilowatts. The office portion of the building would require about 299,000 kilowatt hours (KWH) per month, the equivalent of about 527 barrels of oil, and 3.6 million KWH or 6,250 barrels of oil equivalents per year. This represents an electrical demand of about 1.06 KWH per sq. ft. per month as compared to an estimated average electrical demand of 1.55 KWH per sq. ft. per month for other typical high-rise office buildings recently proposed in San Francisco. Peak at-source electrical demand for the offices would be about 1660 KWH or 17.0 million Btu at-source (2.9 barrel of oil equivalents.) This peak would occur at 12:00 noon on August afternoons and would not coincide with the PG&E system-wide (northern California service area) peak demand period which occurs late on August afternoons. Estimated average daily and annual electrical distribution curves are shown in Figures 24 and 25, p.109 - 110.

TABLE 12: ESTIMATED ANNUAL PROJECT ENERGY CONSUMPTION

	Units of Energy (in Thousands)	At-Source Resource Use (billions of Btu)*	Barrel Oil Equiv. (BBL. Oil)
OFFICE			
Electricity	3,600 KWH	36.9	6,270
Natural Gas	2,150 cu. ft.	2.4	400
CONDOMINIUMS			
Electricity	2,110 KWH	21.6	3,680
Natural Gas	740 cu. ft.	1.8	140
TRANSPORTATION**			
Gasoline	120 gallons	16.8	2,850
TOTAL PROJECT	-	78.5	13,340

*1 KWH = 10,239 at-source Btu
1 cubic foot = 1,100 at-source Btu
1 gallon = 140,000 at-source Btu
1 BBL. Oil = 5.88 million at source Btu.
**for vehicular trips generated by the project

SOURCE: Environmental Science Associates, Inc. and Skidmore, Owings & Merrill

The condominiums would require 176,000 KWH per month (the equivalent of 306 barrels of oil), or an electrical demand of about 2.02 KWH per sq. ft. per month. Peak at-source electrical demand would be 620 KWH, equivalent to 6.4 million at-source Btu, or 1.1 barrels of oil. This would occur at 5 p.m. on August evenings and would coincide with the PG&E system-wide peak.

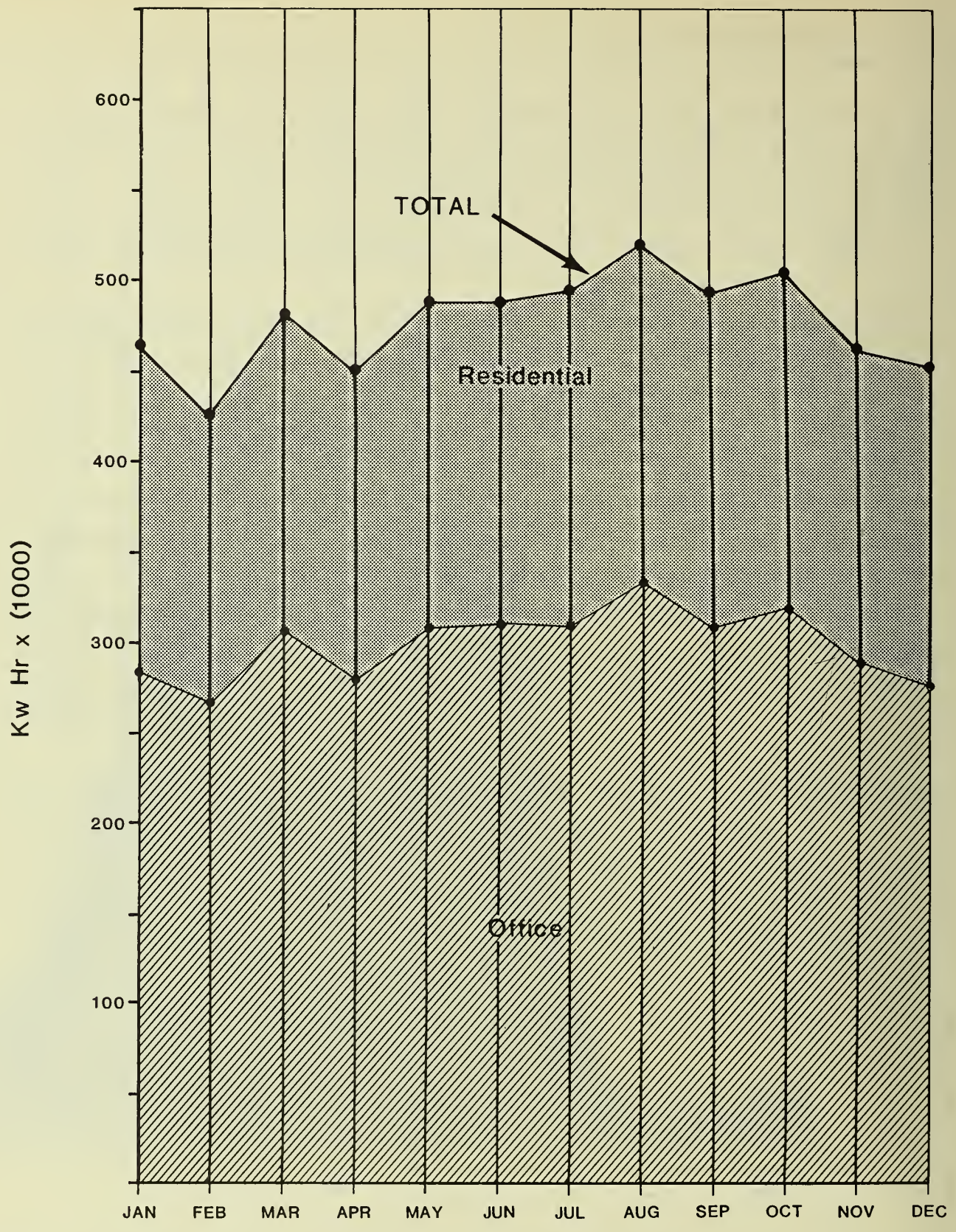
The project would require a total of about 240,000 cubic ft. of natural gas per month, 179,000 for offices and 61,000 for the condominiums. This represents a consumption of about 0.7 cubic ft. per sq. ft. per month for the office portion as compared to a projected average of 2.2 cubic ft. per sq. ft. per month for recently proposed high-rise buildings in San Francisco. Peak demand for natural gas for the office portion of the building would be about 3,300 cubic ft. per hour, equivalent to 0.6 barrels of oil, and would occur at 9:00 a.m. on weekday mornings in December. This would not coincide with the PG&E (northern California service area) system-wide peak period for natural gas which occurs in the early evening hours in January. Estimated annual and average daily natural gas distribution curves for the project are shown in Figures 26 and 27, pp. 111 - 112.

The condominiums would consume an estimated 61,000 cubic ft. (67 billion Btu) of natural gas per month. This represents consumption of about 0.7 cubic ft. per sq. ft. per month of natural gas. Peak demand for natural gas would be about 1,120 cubic ft. per hour and would occur at 9:00 a.m. on December mornings; this would not coincide with the PG&E evening January peak period.

NOTE: Residential Values Are Total Minus Office

SOURCE: Environmental Science Associates, Inc. and Skidmore, Owings, & Merrill

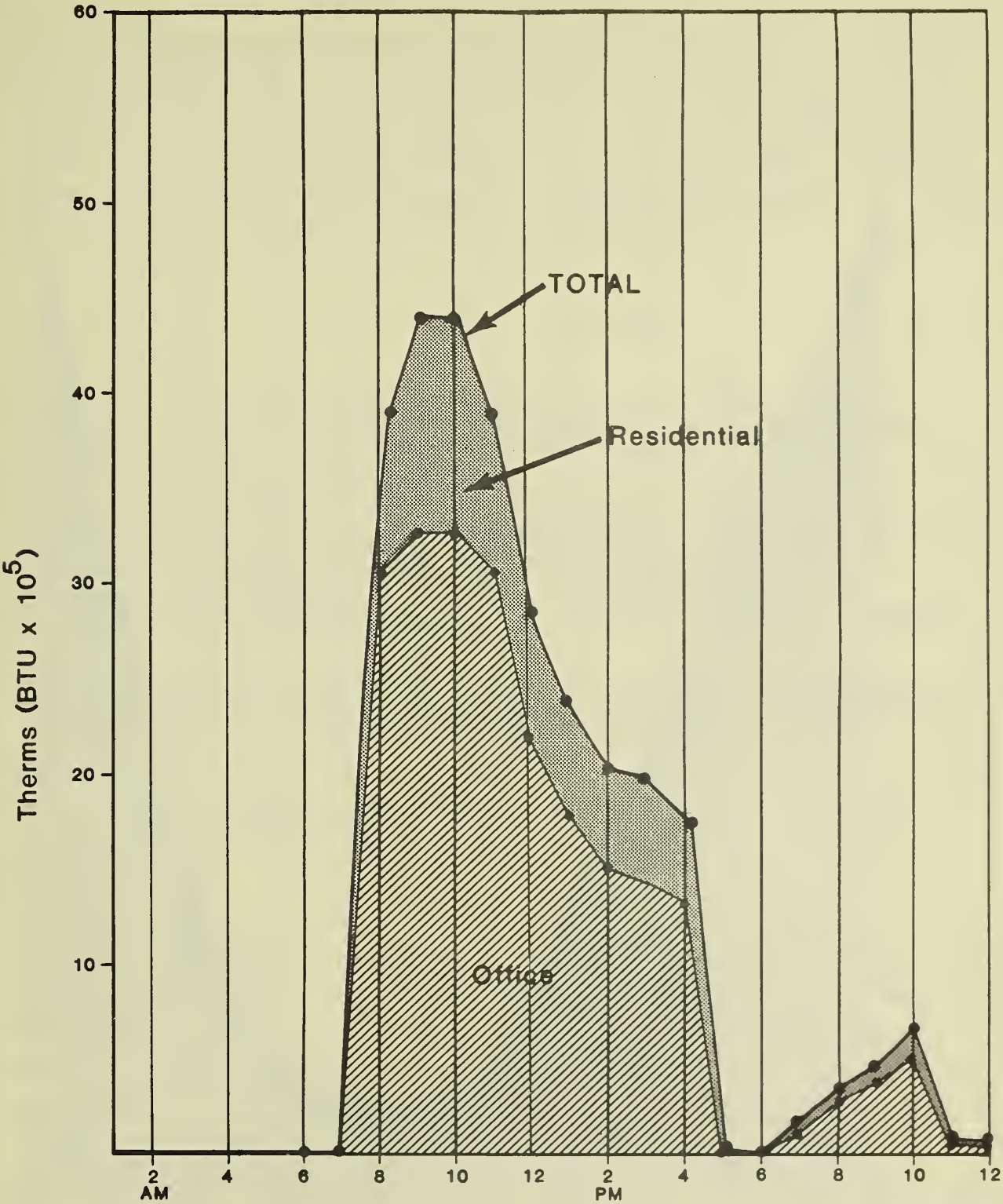
FIGURE 24: Estimated Average Daily Electrical Load Distribution Curves



NOTE: Residential Values Are Total Minus Office

SOURCE: Environmental Science Associates, Inc. and Skidmore, Owings, & Merrill

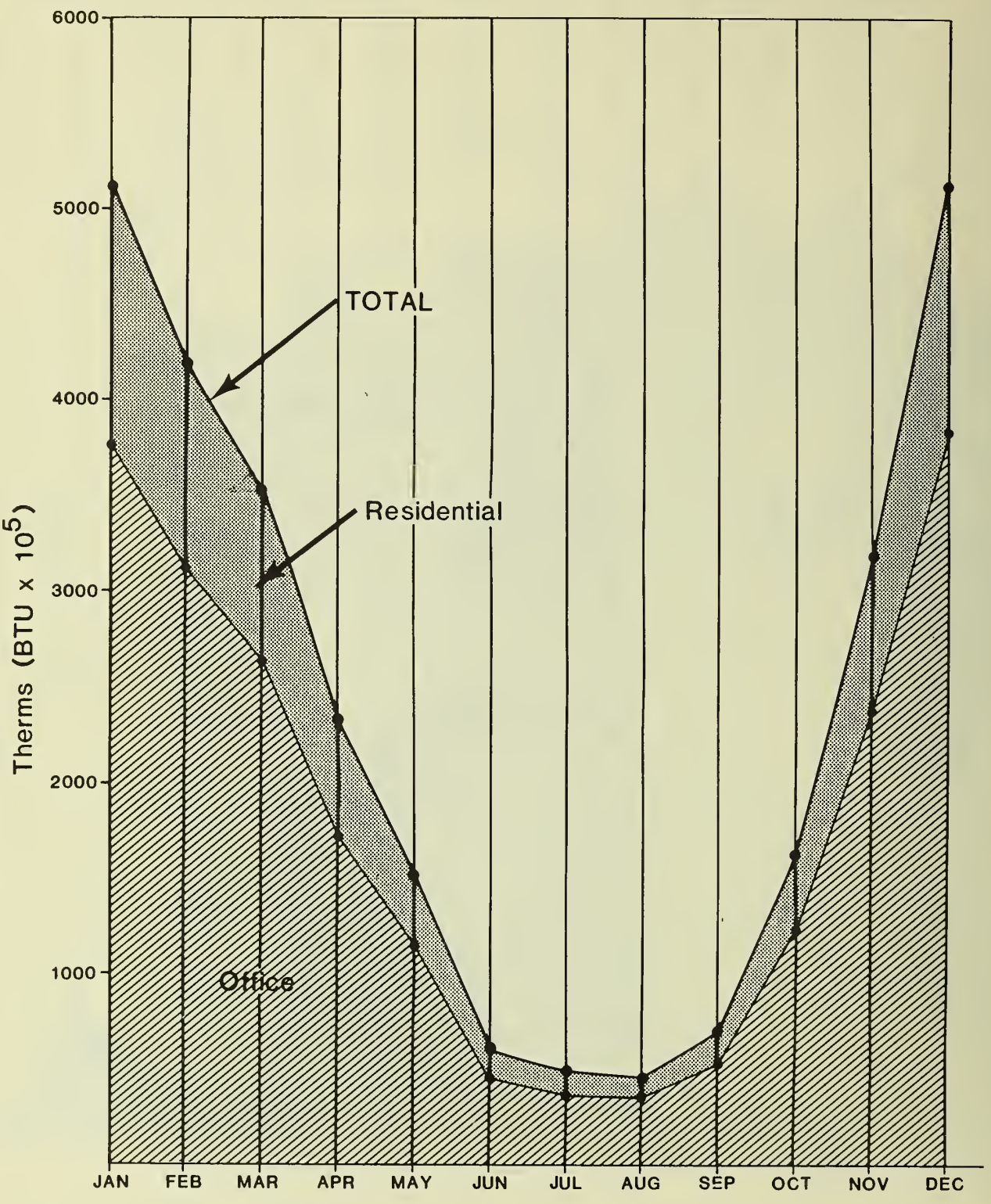
FIGURE 25: Estimated Annual Electrical Load Distribution Curves



NOTE: Residential Values Are Total Minus Office

FIGURE 26: Estimated Daily Natural Gas Distribution Curves

SOURCE: Environmental Science Associates, Inc. and Skidmore, Owings, & Merrill



NOTE: Residential Values Are Total Minus Office

FIGURE 27: Estimated Annual Natural Gas Distribution Curves

SOURCE: Environmental Science Associates, Inc. and Skidmore, Owings, & Merrill

The projected net increase in vehicle fuel use for the traffic generated by the project would total about 120,000 gallons of gasoline per year (about 16.8 billion Btu at-source, or 2,850 barrels of oil). This projected use is based upon the mix of vehicles expected in California in 1985. In general, statewide vehicle fuel use is expected to decrease until 1995 as the vehicle fleet becomes more efficient, and fuel more expensive.

NOTES - Energy

/1/ Btu, British thermal unit, is a standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water 1 degree Fahrenheit (251.98 calories) at sea level. The term 'at-source' means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy which occur during generation and transmission of the various forms of energy as specified in: ERCDC, 1977, Energy Conservation Design Manual for New Nonresidential Buildings, Energy Resources Conservation and Development Commission, Sacramento, CA; and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978, Energy and Transportation, Sacramento, CA. (Project 20-7, Task 8).

/2/ California Energy Commission, July 26, 1978, Regulations Establishing Energy Conservation Standards for New Residential and new Nonresidential Buildings, Title 24 of the California Administrative Code.

H. GEOLOGY, SEISMOLOGY, AND HYDROLOGY

GEOLOGY

Demolition of existing buildings would take about two months; about 84,000 cubic yards of material would be removed./1/ The entire site would be excavated to a depth of about 26 ft.; about 15,000 cubic yards of material would be removed from the site over a period of about one month. Excavated material would probably consist of fill and Bay Mud, and would most likely be transported via Davis St. and U.S. 101 to a disposal site near the San Francisco Airport or Redwood Shores. Spilled dirt from haul trucks could present a safety hazard to motorists and pedestrians, cause siltation in storm drains and be a source of dust.

Geologic hazards on the site during excavation and construction could be caused by the exposure of pit walls without proper shoring. Loosely consolidated materials, in particular Bay Mud, may lose strength and be literally squeezed into the pit due to pressure from overlying materials. In compliance with the Excavation Standards of the California Occupational Safety and Health Agency, the contractor would shore up and protect pit walls from lateral movement of soils into the pit. This would minimize the hazard to construction workers and surrounding streets or buildings and possible damage to construction on the site.

The project would be supported on piles driven down to stable materials. A pile foundation would effectively reduce the hazards on the site in terms of weak soils and subsidence, although some minor but allowable settlement may occur.

SEISMOLOGY

Groundshaking would be the major seismic hazard for the project during an earthquake. The project would incorporate a moment-resisting steel frame in its construction, thus minimizing the possibility of the building's collapse during an earthquake, although major structural damage may result./2/ The buildings would be designed to meet the seismic standards of the San Francisco Building Code. The Code contains specific requirements for materials, welding and bolting to ensure that a building would not collapse under earthquake-induced motions. Loosely attached or unattached elements within the building, such as bookcases and light fixtures, could topple and glass windows may break and fall to the street. The building facade would be composed of granite panels and glass; the granite would be bonded to pre-cast concrete panels on the exterior of the tower. Steel brackets, cast into the concrete panels, would be welded or bolted to the steel building frame to minimize the possibility of panels falling during an earthquake.

The use of a pile foundation and the removal of the fill below the site would minimize the effects of liquefaction and subsidence on the project. However, liquefaction could occur under adjacent streets during a major earthquake,

causing pipes and utility lines to bend or break and street surfaces to buckle or crack. Thus, services to the project, such as water and electricity, could be cut off. For this reason, the San Francisco Building Code requires that an emergency water supply and power generator be incorporated into the building design.

HYDROLOGY

Dewatering would be required during excavation and construction for an estimated period of about five months. The rate of flow is projected to be about 100 gallons per minute and would probably involve about 15 million gallons of groundwater./3/

All water from dewatering operations would be discharged into the existing storm drain system. Dewatering may produce local subsidence in compressible geologic materials such as artificial fill and Bay Mud, causing damage to surrounding streets, older buildings, and utility lines. The Department of Public Works requires that a surety bond be posted before issuance of permission for excavation. The construction contractor would be held responsible for any damage that might result from dewatering. Dewatering operations would probably not have any permanent impact on the groundwater table; groundwater conditions would probably return to normal following the cessation of dewatering.

Because the project would extend below the groundwater table, seepage may occur in the lower parking level. Groundwater could also damage basement walls by infiltration into the walls or by hydrostatic pressure. The project would have no impact on runoff from the site.

NOTES - Geology, Seismology, Hydrology

/1/ Estimates of the duration and amount of material involved in demolition and excavation are rough approximations. Final estimates, to be developed by the project architect prior to construction, may vary substantially from the figures shown. The depth of excavation was assumed to extend to the bottom of the structure (i.e. the bottom of the lowest basement slab as shown on the project plans), and may extend a few feet lower.

/2/ A moment-resisting frame is a type of steel construction that emphasizes the strength of the connection between vertical columns and horizontal beams. This type of frame has been designed to resist the lateral pressures induced by wind or earthquakes that tend to cause frame collapse.

/3/ Estimates of the duration and extent of dewatering are preliminary and approximate. Estimates were made based on geotechnical studies conducted for the adjacent 101 California St. Building. More precise information will be developed upon completion of a foundation investigation for the project.

I. GROWTH INDUCEMENT

The project would add about 62,000 gross sq. ft. of commercial space and about 85,900 gross sq. ft. (57 units) of residential space to the Financial District. Employment at the site would increase by about 380, from about 600 to about 980. Occupants are not presently known, but would probably include tenants expanding or relocating from other San Francisco locations, tenants relocating from outside San Francisco, and firms new to the Bay Area. Therefore, the increase in employment at the project site would not necessarily represent employment that is new to San Francisco. If the building were fully leased and the office space provided by the project did not create permanent vacancies in other San Francisco office buildings, total employment in San Francisco would eventually increase directly by about 380 jobs due to the project. Approximately 450 additional jobs would be indirectly supported in San Francisco through the multiplier effect (see Section IV., Employment, Housing, and Fiscal Factors, p. 75).

This overall growth would be in response to the increasing demand for office space in San Francisco's Financial District. This demand would exist whether or not the proposed project were built. The demand for office space continues the trend of growth in service sector and headquarters office activities and employment in San Francisco. The increases in downtown office space and employment would contribute in turn, to continued growth of local and regional markets for goods, services and housing.

It is expected that some downtown workers would desire to live in San Francisco. Employment growth, however, may not directly correspond to increases in demand for housing and City services to residents, as some new

jobs would be held by individuals who already live in the City but who previously either did not work or worked outside the City, or by those who prefer to live in surrounding communities, or by those who would not be able to afford or to locate housing in the City.

Any net increase in employment downtown would increase the demand for retail goods and services in the area. By increasing office employment, the project would intensify the demand for retail goods and services. Some of this demand would be met by the proposed retail space on the ground floor and second floor of the project.

Increases in employment downtown would also increase demand for business services, to the extent that the expanded space would not be occupied by firms providing those services. In response, demand would increase for existing space and possibly for further new development.

The proposed provision of about 57 condominium apartments in the project could generate a demand for some resident-serving retail services. To the extent that they are not located within the project, new facilities could be induced to locate nearby. The placement of residential units in this location could tend to encourage other new developments in the Financial District to include housing, and could result in greater 24-hour activity in the Downtown.

V. MITIGATION MEASURES PROPOSED TO MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been or would be adopted by the project sponsor or project architects and contractors, some are under consideration by the project sponsor, some may be implemented by public agencies, and the remainder have been rejected by the sponsor. The City Planning Commission could require that some or all of these measures be included as conditions of project approval, if found to be warranted.

Each mitigation measure and its status are discussed below. Where a measure has been rejected, the reasons for its rejection are discussed.

A. URBAN DESIGN

MEASURE PROPOSED AS PART OF THE PROJECT

1. The project would incorporate pedestrian amenities, including street trees, two levels of retail use and landscaping in the public gallery and at the building entrances.

B. EMPLOYMENT, HOUSING AND FISCAL FACTORS

MEASURES PROPOSED AS PART OF THE PROJECT

2. The project proposes to provide approximately 57 residential condominium units on-site. The size of these units would vary to provide for a diverse market sector. Project housing would partially offset estimated increase in demand on the City's housing supply of 84 units that would be generated by the net increase in office employment at the project site. The

project sponsor would mitigate the remainder of the housing impact through off-site housing development or contributing to the City's low- and moderate-income mortgage investment pool.

3. The project sponsor would negotiate, with existing tenants having leases that would be prematurely terminated by the project, to provide financial assistance for relocation activities.

C. TRANSPORTATION

MEASURES PROPOSED AS PART OF THE PROJECT

4. During the construction period, construction truck movement would be limited to the hours between 9 A.M. and 4 P.M. to minimize peak-hour traffic conflicts. The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering to determine feasible traffic mitigation measures to reduce traffic congestion during construction.

5. To minimize cumulative traffic impacts due to lane closures and street excavation during construction, the project sponsor would coordinate with construction contractors for any concurrent nearby projects that are planned for construction, or later become known.

6. The project sponsor would require, by contract, that the general contractor provide off-street parking for construction workers on the project site or at an off-site location, to minimize demand for on-street parking by construction workers.

7. The project sponsor proposes to provide long term parking in excess of the required ratio of one space for every four dwelling units for building residents to alleviate the residential parking demand generated by the project. About 37 parking spaces are proposed to be allocated for residents of the 57 proposed condominiums. Approximately 10 spaces would be used for short-term parking for visitors to the office building.

8. Upon project completion the project sponsor would encourage tenant firms to implement a flexible time ("flex-time") system for employee working hours (flex-time is designed to reduce peaks of congestion in the transportation system).

9. To reduce pedestrian congestion on sidewalks surrounding the site, the project includes multiple building entrances, widened sidewalks and a direct connection to the Market St. Subway. Access from the lower basement level of the project to the Embarcadero Station of the Market St. subway would encourage the use of Muni and BART and reduce traffic congestion in the Downtown.

10. To mitigate traffic congestion by the project, a transportation broker would be sought to encourage transit use through the sale on-site of BART and Muni passes, and to encourage employee car pool and van pool systems in cooperation with RIDES for Bay Area Commuters by providing a central clearinghouse for car and van pool information.

11. The project sponsor would support whatever legal means if finally adopted by the Board of Supervisors to contribute funds to an established Downtown transit assessment district to mitigate peak-hour transit congestion caused by cumulative office development in the Downtown area.

12. Within a year of full occupancy of the project, the project sponsor would conduct a survey, in accordance with methodology approved by the Department of City Planning, to assess actual trip generation patterns of project occupants and actual pick-up and drop-off areas for car pools and van pools. The project sponsor would make this survey available to the Department. Alternatively, at the request of the Department, the sponsor would provide a fair and equitable in-lieu contribution toward an overall transportation survey for the downtown area to be conducted by the City.

13. As a safety mitigation, the parking garage entrance has been designed so that drivers and pedestrians would have an unobstructed view of the intersection of the sidewalk and garage entrance.

14. The project sponsor would provide secure bicycle parking facilities to encourage the use of bicycles by employees and messengers. Handicapped parking and handicapped access facilities would be provided in the proposed parking garage.

15. Building directories and visual aids indicating the location of the freight elevators would be placed in the loading area of the building. This measure would be consistent with recommendations contained in the Department of City Planning document Guiding Downtown Development.

16. The building would have "eyebolt" fixtures suitable for suspending Muni trolley wires on the frontages of Market and Front Sts., in accordance with the recommendations of the Muni planning department.

MEASURES THAT COULD BE IMPLEMENTED BY PUBLIC AGENCIES

17. Pacific Gas and Electric Company could coordinate work schedules with other utilities requiring trenching, so that street disruption would take place during weekends and off-peak hours. This chould be done through the San Francisco Committee for Utility Liason on Construction and Other Projects (CULCOP).

18. The overload that would occur in Muni, BART, A-C Transit and the SamTrans mainline route (highway 101) due to cumulative development in the Downtown area could be mitigated by provision of additional buses, by headway changes, and possibly by shifts in routes. Implementation of this mitigation measure by the applicable transit carriers would depend primarily on the availability of funds and on actions initiated by MTC and the respective transit agencies and districts.

19. Modification of the traffic signalization at the intersection of Pine and Front Sts. could be implemented by the Department of Public Works, if such action were determined appropriate by the agency, to reduce pedestrian and vehicle conflicts resulting from operation of the project parking garage.

MEASURE REJECTED

20. The provision of loading facilities to accommodate semi-trailers has been rejected by the project sponsor due to the configuration of the proposed parking facility and to lack of space.

D. AIR QUALITY

MEASURES PROPOSED AS PART OF THE PROJECT

21. During excavation, unpaved demolition and construction areas would be wetted at least twice a day to hold down dust; this would reduce particulate emissions (dust) by about 50 percent. A solid fence would be provided around the construction site to further reduce dust.

22. The project contractor would maintain and operate construction equipment in such a way as to minimize exhaust emissions. During construction, trucks in loading or unloading queues would be kept with their engines off when not in use to reduce carbon monoxide emissions. The project sponsor would meet with the Department of Public Works to discuss and agree upon a scheduling program to minimize the queuing of construction vehicles.

23. Interior air quality would be controlled by a variable-air-volume ventilation system that would provide a minimum of two to three air changes per hour in occupied spaces. Ventilation air would be a filtered mixture of outside and recirculated air, and would maintain or surpass applicable outdoor air quality standards.

E. CONSTRUCTION NOISE

MEASURES PROPOSED AS PART OF THE PROJECT

24. The project contractor would muffle and shield intakes and exhaust, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible.

25. The project contractor would limit piledriving to the hours resulting in the least disturbance to neighboring uses. Work after 7:00 p.m. would require a night-work permit from the Department of Public Works. The project sponsor and project contractor would meet with the Bureau of Engineering to determine specific hours and additional necessary and feasible measures to reduce noise during the period that piledriving would occur.

26. The general contractor would construct barriers around the site, and around stationary equipment such as compressors, which would reduce construction noise by as much as 5 dBA. The general contractor would locate stationary equipment in pit areas or excavated areas as these areas would serve as noise barriers.

F. ENERGY

MEASURES PROPOSED AS PART OF THE PROJECT

27. The project would exceed the minimum energy use requirements of Title 24 of the California Administrative Code. Based on initial estimates presented in the energy section of this report, the project would exceed Title 24 standards by about 10 percent.

28. Whenever possible, office suites would be equipped with individualized light switches, time clock operation, and fluorescent lights to conserve electric energy. Individually metered water and electric services for the residential units would provide an incentive to reduce energy consumption.

29. The heating, ventilating and air conditioning (HVAC) system would be equipped with an economizer cycle to use outside air for cooling, as feasible. Apartments would have windows that would open for natural ventilation.

30. Residential and office water heating systems would be insulated to minimize waste heat. In residential units, water heaters would be placed as close as possible to the source of use (sinks, showers, dishwashers), to minimize heat loss.

31. Project energy use would be monitored and/or controlled by a computer-based building automation system.

32. The project would provide containers, to be located on the first parking level, available to tenants of the entire building for collection of recyclable solid wastes (such as glass, metal, computer cards, and newspaper) and the building manager would contract for recycling service.

MEASURES RECOMMENDED AND/OR UNDER CONSIDERATION

33. The project sponsor is investigating the feasibility of passive or active solar features for residential units and common areas; such features could be incorporated into the project, if proven feasible.

34. The project sponsor is considering incorporating load managment measures to lower the building energy demand during PG&E peak-hour demand periods.

35. The project sponsor is investigating the use of openable windows for the commercial portions of the building and install, if feasible.

36. The project sponsor is investigating methods of utilizing waste heat from the commercial portions of the building to heat the residential units. If such a method proves technically and economically feasible it would be included as part of the project.

MEASURES REJECTED

37. Double or triple paned windows were rejected by the project engineers because they would unnecessarily insulate the building, increasing the cooling demand of the project, and would represent increased energy costs and consumption of energy for fabrication of building materials.

38. Use of natural gas in the condominiums for cooking and heating has been rejected by the project engineers because it would be infeasible to provide individual natural gas connections to the condominiums. Natural gas is not feasible for residential use on the upper floors due to metering, flue and venting problems.

G. GEOLOGY, SEISMOLOGY, AND HYDROLOGY

MEASURES PROPOSED AS PART OF THE PROJECT

39. The project sponsor would have a geotechnical report prepared by a California licensed engineer, and would comply with the recommendations of that report for foundation design and site preparation.

40. During project excavation, the contractor would install groundwater observation wells and monitoring instruments to monitor the levels of the water table and potential settlement. If, in the judgment of City engineers, unnacceptable subsidence occurs during construction, the contractor would recharge the groundwater table to halt the settlement. The City would require a lateral and settlement survey to monitor any movement or settlement of surrounding buildings and adjacent streets during the dewatering. Control lines and benchmarks would be established for monitoring horizontal and vertical movement. Costs for the survey and any necessary repairs to services under the streets would be borne by the contractor.

41. During construction, the contractor would sweep streets mechanically or by hand to prevent siltation of storm drains and generation of dust. The contractor would also confine construction equipment, maintenance, and refueling activities to locations where petroleum spillage would be contained.

42. Windows would be installed in the project in such a way as to minimize the possibility of breakage during an earthquake, and to maximize the possibility of glass falling inward, rather than outward, should windows break.

43. Subdrains would be provided beneath the parking facility to remove groundwater which could potentially seep into the structure.

44. The project sponsor would post a surety bond if required by the San Francisco Department of Public Works before issuance of a permit to excavate. Such a bond would protect the Ctiy against damages to City-owned sidewalks, streets and utilities.

45. The project sponsor would require the project contractor and sub-contractor to obain a Faithful Performance and Payment Bond, if proper financial capability is not evident, and to be responsible for any damage to existing buildings which might result from excavation. This bond would protect the project sponsor and owners of nearby properties if any damage to these properties were to result from construction activities.

G. CULTURAL

MEASURE PROPOSED AS PART OF THE PROJECT

46. Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist or other expert to help the Office of Environmental Review determined the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

H. UTILITIES AND PUBLIC SERVICES

47. An evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office of Emergency Services, to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before issuance by the Department of Public Works of final building permits.

48. The project would incorporate low-flow faucet, shower and toilet fixtures to reduce water consumption and wastewater generation.

49. When in operation, the project would provide internal security measures to reduce the demand on police services. These measures would include a closed-circuit TV system, security guards, well-lighted entries, alarm systems, and separate entrances for residential areas of the building with call-telephones and computerized lock systems.

50. The building would be equipped with a trash compactor to reduce the volume of solid waste requiring storage and transport. Separate storage facilities for recyclable waste material would be provided for both office and residential uses.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

A. URBAN DESIGN

The project, in replacing the shorter existing structures on the site would create more extensive shadow patterns than exist at present. The project would be generally surrounded by taller buildings so that much of its shadow pattern would coincide with shadows cast by other structures in the vicinity. No public parks would be shaded by the project; during winter afternoons the proposed building would contribute to shadows on the plaza of the 101 California St. Building, presently under construction.

B. EMPLOYMENT, HOUSING AND FISCAL FACTORS

The project would create jobs for about 380 net new employees and would require displacement of ten offices and three retail establishments, presently employing about 600 people.

C. TRANSPORTATION

The project would provide about 47 parking spaces and would generate a demand for about 410 parking spaces daily, resulting in a projected daily deficit of about 365 spaces. That the project would not meet the demand which would be created for long-term parking is consistent with the overall policy contained in the Revisions to the Transportation Element of the Master Plan, to discourage additional long-term parking in the downtown "core" area.

The project would contribute to cumulative traffic and increased passenger loadings on Muni and other transit agencies.

Although the project would include the number of loading docks required by the City Planning Code and City Planning Resolution No. 9286, dated January 21, 1982, the dimensions of the loading docks and the length of proposed curb cuts on Front St. would not conform to the minimum requirements of Resolution No. 9286.

D. CONSTRUCTION NOISE

During excavation and exterior finishing, noise levels in the 101 California St. base building, and the lower floors of the 333 Market St., 444 Market St., 111 Pine St. and PG&E buildings could reach as high as 65 dBA. Ambient noise at this level would interfere with the human speech and concentration and require raised voices to communicate at distances greater than six ft. Noise levels would reach 75 dBA in these buildings as a result of piledriving during the three month period of foundation preparation. These intermittent noise intrusions would require raised voices at two ft. and shouting at 12 ft. in order to communicate.

E. ENERGY

Projected total energy use by the project would be about 76.8 billion Btu at-source per year. Total projected energy consumption would be equivalent to about 13,000 barrels of oil per year. The project would have an associated net consumption of about 120,000 gallons of gasoline for project-generated vehicular traffic.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

Several alternatives to the project as proposed are described and compared below. With the exception of Alternative Six, The No Project Alternative, all of these project alternatives contemplate development at the same location as the proposed project. The project sponsor has considered or is considering each of these alternatives.

A. ALTERNATIVE ONE: INCREASED RESIDENTIAL FLOOR AREA

This alternative would result in development of a combined office and condominium residential building on the project site. The alternative design would not conform to the City Planning Code and Interim Controls and its approval by the City Planning Commission would require a modification of the Code. Alternative One would contain a total of 30 stories and be about 430 ft. tall, about 55 ft. taller than the project (see Figure 28). This alternative would be similar to the project in bulk and design; the subsurface parking, retail and office floors would be identical to the project except that access to the parking levels would be provided via two adjacent ramps for egress and ingress, rather than a single ramp as proposed for the project. Alternative One would include about 90 condominiums, 33 more than the project. This alternative would respond to evolving City housing policy contained in Guiding Downtown Development, which recommends that 640 sq. ft. of residential use be constructed for each 1000 sq. ft. of office space.

As in the proposed project, gross floor area of the commercial portion of the building would be approximately 257,000 sq.ft., an FAR of about 14:1. The plans for Alternative One include about 144,000 gross sq. ft. of housing for an additional FAR of about 7.8:1. The total gross floor area for the building would be approximately 401,000 sq. ft., (compared to 342,900 sq. ft. for the project) representing an FAR of about 21.8:1 (compared to 18.7:1 for the

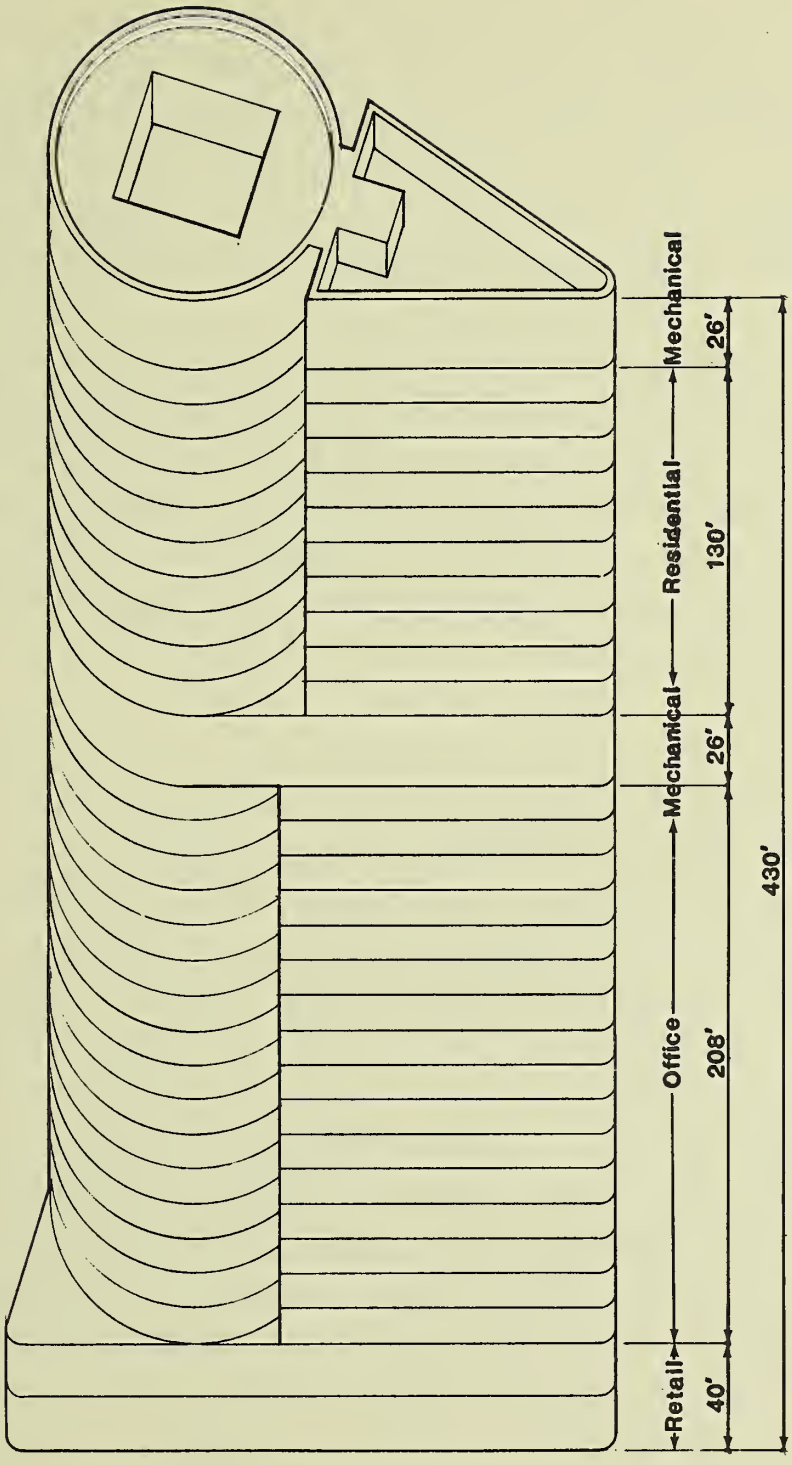


FIGURE 28: Alternative One – Increased Residential Floor Area

SOURCE: Skidmore, Owings and Merrill

project). The project sponsor would apply for a Conditional Use authorization for approximately 85,900 sq. ft. of bonus floor area. Applicable bonuses, allowed under Section 126 of the City Planning Code, would be used for residential space as provided for under the Interim Controls. The sponsor would request bonuses for rapid transit access, multiple building entrances, sidewalk widening, shortened walking distances, and a rooftop observation deck (See Table 1, p. 24). Alternative One proposes a total of 144,000 sq. ft. of residential space (compared to 85,900 sq. ft. for the project), about 58,100 sq. ft. more than identified bonuses would allow. Because it would exceed the allowable FAR of 14:1 plus bonus space, Alternative One would not conform to the City Planning Code. Therefore, the City Planning Commission could not approve this alternative as proposed. An amendment of the City Planning Code and possibly a change in the Interim Controls would be required to allow approval of this alternative.

According to Section 302 of the City Planning Code, an amendment may be initiated by the Board of Supervisors or by a resolution of intention by the City Planning Commission. An interested property owner may not initiate changes in the text of the Code. If approved by the City Planning Commission, a proposed amendment must be presented to the Board of Supervisors and the Board can adopt the amendment by a majority vote. There are several ways in which the Planning Code could be modified to permit the area of on-site housing proposed under Alternative One. The alternative could be approved by modification of Section 304 of the Code concerning sites which qualify for Planned Unit Developments. Another way the Code could be modified to allow approval of Alternative One would be to amend Section 126(b) which describes development bonuses in C-3 Districts. Were Section 126 to be amended, corresponding changes in the Interim Controls for the Downtown also would be required to allow the new floor area bonus.

This alternative would contain the same maximum diagonal dimension as the project, about 220 ft.; as with the proposed project, a Conditional Use authorization would be required to exceed the maximum permitted length and diagonal bulk limitations of the Code. There would be two levels of subsurface parking, accommodating about 47 passenger vehicles. As for the proposed project, a revocable encroachment permit would be required to allow

the subsurface parking levels to extend beneath the Pine St. and Front St. sidewalks. Two loading docks would be accessible at grade from Front St. to comply with the number required by the City Planning Code and City Planning Commission Resolution No. 9286, dated January 21, 1982. As with the project, the curb cut dimensions on Front St. for access to the loading dock and parking levels would not conform to Resolution No. 9286 requirements.

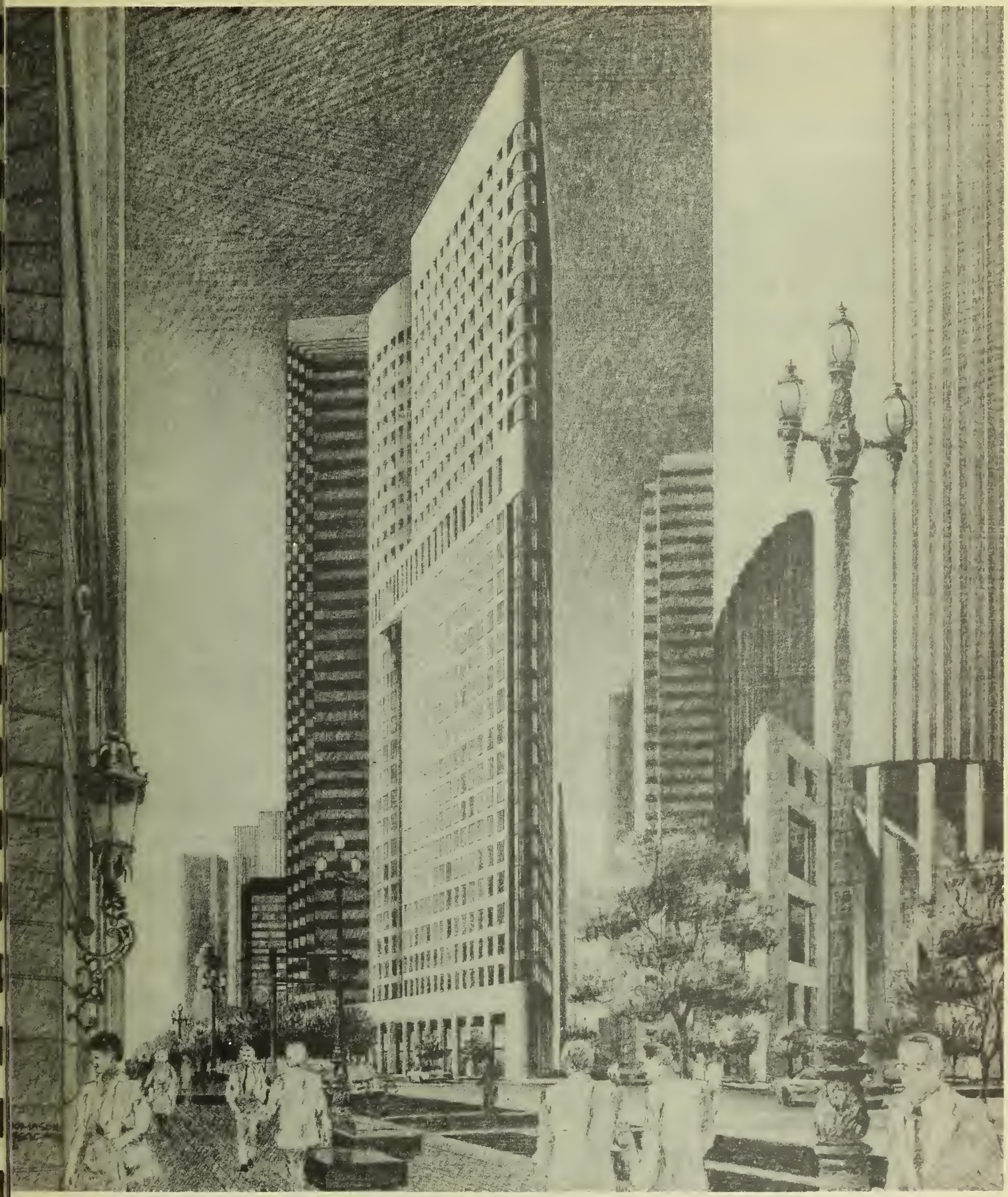
There would be two levels of retail use containing a total of about 10,000 sq. ft. of space, separate lobby and elevator access to the residential and office portions of the building, and a direct connection to the Embarcadero Station of the Market St. subway. The building would contain 16 floors of office space, two full floors of mechanical space and ten full floors of residential space. According to Section 134 of the City Planning Code, a 25 percent rear yard would be required at each residential level in this C district. As with the proposed project, Alternative One would require a variance from this requirement.

The impacts of this alternative would generally be similar to those described in the Environmental Impacts section of this report (see Section IV, pp. 55 - 117) for the office portion of the proposed project. By providing more residential units than the project, this alternative would satisfy the net housing demand of about 80 units which would be generated by the office portion of the building. An amendment to the City Planning Code which could allow the amount of on-site housing proposed for this alternative would have an impact on subsequent development in the C-3 District. Such a modification to the Code would encourage the provision of additional on-site housing in future high-rise development. It is likely that such an amendment to the Planning Code would result in buildings which exceed the maximum FAR and height recommendations contained in the Department of City Planning document Guiding Downtown Development. It is not possible to determine the exact location, size, or number of buildings which might be proposed as a result of such a change in the Planning Code. Modification of the Planning Code to allow approval of the project would generally encourage more housing units in the C-3 District. An increase in housing would result in greater development of residential retail facilities and domestic conveniences, as well as greater 24-hour activity, in the Downtown.

The building tower would be more visible than existing structures on the site and about 55 ft. taller than the proposed project (see Figure 29). The effect of this alternative on views of existing buildings in the site vicinity would be greater than the proposed project because of the increased height. Shadow effects would also be increased under this alternative.

As with the proposed project, this alternative would result in demolition of the two existing structures on the site. Transportation, air quality, noise and dewatering impacts associated with building construction would generally be similar to those for the proposed project, although the construction period would be longer due to the increased building size. Energy consumption for the office portion of the building would be the same as with the project; the residential energy consumption would be about 40 percent greater.

Operational traffic impacts would be slightly more for Alternative One than for the proposed project. Approximately 470 net peak-hour person-trips would be created under this alternative compared to about 425 from the proposed project. Peak-hour Muni demand under this alternative would exceed project demand by about 11 percent; as with the project, this would be less than one percent of overall demand in 1984. Alternative One would generate 11 percent more pedestrians than the project; flows would continue to range over one to four pedestrians per foot of effective sidewalk width per minute on the site block. Service levels at crosswalks would be the same as for the proposed project. Trips to the parking facility would be equal to that of the project, therefore, conflicts between pedestrians and vehicles accessing the parking levels would be the same as with the single ramp design proposed for the project. Under the double ramp design of Alternative One inbound vehicles would not be required to wait on Front St. for outbound garage traffic to clear the ramps. The parking deficit for this alternative would be approximately the same as that of the proposed project. Service deliveries would increase by approximately 11 percent with proportionally greater pedestrian conflicts in front of the loading docks. Curbside loading and pedestrian/vehicle conflicts would be expected to occur about 11 percent more often than with the proposed project.



See Note /1/ , p.26, for a discussion of the Rendering perspective

FIGURE 29: Rendering of Alternative One from Market Street looking West

SOURCE: Skidmore, Owings and Merrill

Alternative One has been rejected by the project sponsor because it does not conform to the City Planning Code. The project sponsor would develop this alternative if the City Planning Commission and Board of Supervisors would modify the Planning Code to permit the amount of on-site housing proposed under Alternative One.

B. ALTERNATIVE TWO: 14:1 PLUS BONUSES OFFICE BUILDING

This alternative represents that which would have been permitted before the Interim Controls (Municipal Ordinance 240-80) on the use of floor area bonuses. If the Interim Controls expired without implementation of any other new controls, permitted bonus space could be used to increase the commercial floor area of the building. Bonuses for rapid transit access, multiple building entrances, sidewalk widening, shortened walking distances, and a rooftop observation deck could permit about 85,900 gross sq. ft. of additional floor area (see Table 1, p. 24). Alternative Two would involve development of a 26-story office building, about 375 ft. tall; there would be no residential use provided on the site. This alternative would contain approximately 342,900 sq. ft. of commerical space, including 85,900 sq. ft. of bonus floor area, representing an FAR of about 18.7:1. The allowable basic FAR for the site of 14:1 would permit about 257,000 sq. ft. of commercial floor area, the amount proposed for the project. Applicable bonuses, allowed under Section 126 of the City Planning Code, could be added to the basic floor area to determine the maximum FAR of the building. Under the limitations imposed by the Interim Controls, permitted bonus space could be used for, and would be limited to, housing.

This alternative would be similar to the project in design and form, and would comply with the use provision of the City Planning Code. Alternative Two would contain the same maximum diagonal dimension as the project, about 220 ft.; Conditional Use authorization would be required to exceed the permitted bulk limitations of the Code. There would be a one-level subsurface parking facility accessed by a single ramp from Front St. The parking level would provide short-term accessory parking and accommodate about 22 passenger vehicles. As with the project, a revocable encroachment permit would be required for the parking level to extend beneath the Front St. and Pine St.

sidewalks. Two loading docks accessible from Front St. would be provided; the number of loading docks would conform to the provisions of the City Planning Code, but would be one less than the number required by City Planning Commission Resolution No. 9286. There would be a double-height public gallery, two levels of retail space containing a total of about 10,000 sq. ft. and a direct connection to the Embarcadero Station of the Market St. subway. The building would contain 23 floors of office use, and a mechanical floor.

Land use effects would be similar to those of the proposed project, except that Alternative Two would not satisfy any of the housing demand which would be generated by on-site office space. Net housing demand generated by this alternative would be for about 160 residential units, approximately double the net demand of the proposed project. This alternative would not result in 24-hour activity on the site or increase demand for domestic-oriented retail services in the Financial District through the provision of residential space.

The building tower would be the same height as the proposed project and more visible than existing structures on the site. Urban design and shadow effects of this alternative would be similar to the proposed project.

As with the proposed project, this alternative would result in demolition of the two existing structures on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to those for the proposed project. Dewatering impacts would be reduced for this alternative because only one level of subsurface parking would be provided. Energy consumption for Alternative Two would be about 35 percent greater than that for office portion of the proposed project. Since no residential energy use would be involved in this alternative, total electrical use would be about 15 percent less than the project; total natural gas use would be about the same as for the project.

Operational traffic impacts would be similar to the proposed project. The number of net peak-hour person-trips (440) created under this alternative would be approximately the same as for the proposed project (425). Impacts on Muni and the regional transit carriers would be similar and represent less than one percent of overall demand. Pedestrian flows would be similar to

those from the proposed project. Parking would be provided for about 22 automobiles; the demand for parking would be for 430 spaces, 360 long-term and 70 short-term (less than 6 hours). Since the proposed project would have 47 basement garage spaces, this alternative would offer about half as many conflicts of pedestrians with vehicles in the curb cut of the project's garage ramp. With two loading docks provided, the occurrence of pedestrian conflicts with trucks and service vehicles and curbside loading would be similar to that of the proposed project. The level of service on Front St. would not be affected by this alternative.

Alternative Two would be desirable to the project sponsor; however, this alternative has been rejected because it does not comply with the limitations on the use of floor area bonus required by the Interim Controls.

C. ALTERNATIVE THREE: GUIDING DOWNTOWN DEVELOPMENT ALTERNATIVE

This alternative would be designed to comply with the guidelines contained in Guiding Downtown Development (GDD), published by the Department of City Planning in May 1981. GDD contains a series of regulatory proposals for managing development in downtown San Francisco affecting size, design, use and location of major buildings. The report proposes changes in the City Planning Code regulations for the C-3 Planning Code Use Districts pertaining to housing, transportation, open-space, and historic preservation. Table 13, p. 142, compares existing development controls contained in the City Planning Code, proposed changes in those requirements contained in GDD, and relevant characteristics of the proposed project.

This alternative would be a 24-story combined office and residential building, approximately 340 ft. tall. Alternative Three would be about 35 ft. shorter than the proposed project. The structure would contain about 220,000 gross sq. ft. of office and commercial space, about 37,000 sq. ft. less than the project, representing the GDD maximum commercial FAR of 12:1. Residential use would occupy about 91,800 gross sq. ft., about 5,900 sq. ft. more than the project, for an additional FAR of 5:1. Assuming an average residential floor area per unit of about 1,500 gross sq. ft. (approximately the same residential

floor area per unit proposed as part of the project), about 61 residential units could be provided, or four more than the number proposed with the project. The overall FAR of this structure would be about 17:1, which is the maximum allowed under GDD. This includes 5:1 additional FAR for housing, if the maximum commercial FAR of 12:1 were developed. This alternative, containing a total of about 311,800 gross sq. ft., about 31,100 sq. ft. less than the project, would be 160 ft. shorter than the height limit for the site recommended in GDD of 500 ft. (see Figure 30 p. 140).

Under this alternative, there would be one level of subsurface parking accessible via a single lane ramp from Front St., and accommodating about 22 vehicles. All parking would be allocated for the residential units; there would be no short-term parking for the commercial portion of the building. As with the project, a revocable encroachment permit would be required for the parking level to extend beneath the Front St. and Pine St. sidewalks. Three loading docks would be provided at grade to comply with the recommended off-street loading space requirement contained in GDD. Appendix D of GDD contains proposed requirements for off-street loading and service vehicle access. This alternative would not conform to these requirements in the following ways: the curb cut for the loading dock would be about 40 ft., compared to a maximum recommended of 24 ft.; and the total length of curb cuts on Front St. for the loading and off-street parking spaces would be about 50 ft., compared to a maximum recommended of 36 ft. This alternative would comply with the GDD recommendation that the combined total width of curb cuts not exceed 33 percent of any single street frontage.

As with the proposed project, there would be two levels of retail space containing a total of about 10,000 sq. ft., and separate lobby and elevator access to the residential and office portions of the building. A direct connection to the Embarcadero Station of the Market St. subway would not be provided under Alternative Three because it would not be needed to request the maximum amount of bonus floor area for residential use and there would be no other incentive. The building would contain 12 floors of office space, two floors of mechanical space between the office and residential space, and eight floors of housing, for a total of 24 stories.

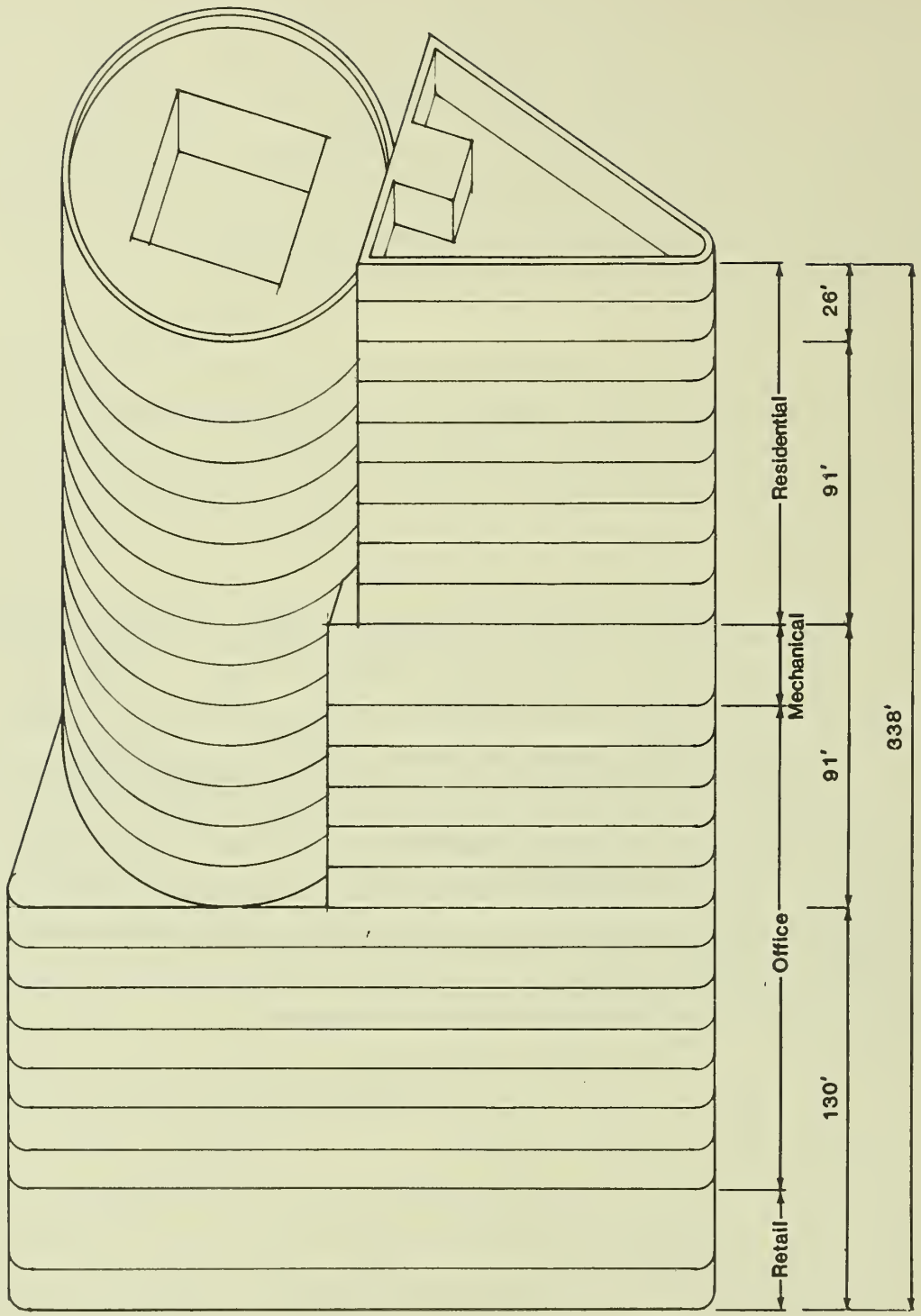


FIGURE 30: Alternative Three-Guiding Downtown Development Alternative

SOURCE: Skidmore, Owings, & Merrill

GDD, would require that the average floor area above 65 ft. not exceed 20,000 sq. ft., and that the average floor area of floors above the midpoint of the height of the building be 2/15ths less than the average floor area of floors below the midpoint. This alternative would comply with the provisions for transfer of bulk from the upper to lower stories of the structure by upper level setbacks and reductions in floor area (see Figure 30). Alternative Three would have the same maximum dimension as the project, about 220 ft; a Conditional Use authorization would be required for this alternative to exceed the average maximum plan dimension of 200 ft. recommended in GDD. According to Section 134 of the City Planning Code, a 25 percent rear yard would be required at each residential level in this C district. As with the proposed project, Alternative Three would require a variance from this requirement.

This alternative would provide the maximum amount of commercial space permitted in GDD. The GDD guidelines specify that housing be provided at the rate of 640 sq. ft. of housing per 1000 sq. ft. of office space. Using this formula, approximately 134,400 gross sq. ft. of residential space (about 190 units) would be necessary to meet the proposed housing requirement, representing an FAR of about 7.3:1. As the maximum amount of commercial floor area would be developed, this amount of residential space could not be accommodated on the site under the FAR limitations recommended in GDD. If 91,800 sq. ft. of housing were provided on-site, an additional 42,600 sq. ft. of housing would have to be constructed off-site to meet the proposed total housing requirement.

This alternative would incorporate art work into the public gallery of the building. The proposed art requirement in GDD specifies that investment in art be equal to at least one percent of total construction costs. Open space for project residents would be provided by private balconies for individual condominiums to satisfy the useable open space requirements of Section 135 of the City Planning Code. For non-residential use, the proposed recreation and open space requirement in GDD, which would total 8,800 sq. ft. for this alternative, could be partially met on-site. An athletic health club, containing about 3,800 sq. ft. would provide common open space for residents and employees of the building and the double height public gallery would

TABLE 13: COMPARISON OF EXISTING DEVELOPMENT CONTROLS TO PROPOSED CHANGES CONTAINED IN GUIDING DOWNTOWN DEVELOPMENT, MAY 1981

Major Development Controls Pertaining to Project Site	Present Requirements- City Planning Code and Interim Controls	Proposed Requirements- Guiding Downtown Development	Proposed Project
Base FAR	14:1	12:1*	14:1 commercial plus 4.7:1 residential
Height Limit	600 ft.	500 ft.	375 ft.
Average Area per Floor	Not specified	20,000 sq. ft. above 65 ft.	15,000 sq. ft. above 65 ft. (office floors)
Maximum Diagonal Maximum Length	200 ft. above 150 ft. in height 170 ft. above 150 ft. in height	Average maximum plan dimension less than 200 ft.	220 ft. above 150 ft. in height 220 ft. above 150 ft. in height
Size of Upper Floors	Not specified	Average floor area of floors above midpoint of building height to be 2/15 (13%) less than average floor area of floors below midpoint.	Average floor area of residential floors approximately the same as average floor area of office
Incorporation of Art	Not required	Art equal to 1% of total construction cost.	Art proposed for ground floor; cost not determined
Ground-floor retail	Not required	2,000 maximum sq. ft. per use to obtain floor area bonus	10,000 sq. ft. proposed to accommodate about four tenants on the first and second floors
Recreation/Open space	Not required for commercial uses; required for dwellings	1 sq. ft. for public use per 25 sq. ft. of gross floor area (about 8,800 sq. ft. at an FAR of 12:1)	Open space for project residents provided by private balconies and an athletic health club.
Off-street loading	2 spaces for buildings containing 200,001 to 500,000 sq. ft., plus 1 space for retail use between 10,001 and 60,000 sq. ft.	0.1 spaces per 10,000 sq. ft. of gross floor area for buildings containing more than 100,000 ft., plus 1 space for retail use between 10,001 and 60,000 sq. ft. (three spaces for the site).	2 spaces provided, as required by the City Planning Code
Long-term Parking	None required for commercial uses; one space required for each four dwelling units	None permitted for office uses	Long-term parking only for residential use
Provision of a Transportation Broker	None required	Proposed Requirement	Transportation broker would be provided
Provision of Housing	None required; floor area bonuses may be used for on-site housing.	640 sq.ft. per 1,000 sq. ft. of office space, about 190 units for site; Maximum FAR equal to 5:1 on-site	85,900 sq. ft., 57 on-site condominiums, proposed for an FAR of 4.7:1

* Additional FAR allowable for provision of housing (5:1); retention of or transferring development rights from significant architectural buildings (3:1); and for the provision of retail uses containing 2,000 sq. ft. or less per use (0.5:1). Maximum FAR, including allowable bonuses, would be 17:1.

SOURCE: City Planning Code; and Guiding Downtown Development, May 1981.

contain about 2,400 sq. ft. of space. The remaining open space requirement of about 2,400 sq. ft. would have to be provided off-site at another location in a C-3-O district or by reducing the amount of ground floor retail space.

This alternative would comply with the general objectives of the San Francisco Comprehensive Plan and with the use provisions of the City Planning Code. The building tower would be more visible than existing structures on the site, but would be about 35 ft. shorter than the proposed project. The effect of this alternative on views of existing buildings and shadow patterns in the site vicinity would be less than the proposed project because of the reduced height.

This alternative would result in demolition of the two existing structures on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to the proposed project. Dewatering impacts would be reduced under Alternative Three as only one level of subsurface parking would be provided. Energy consumption for the office portion of the building would be about 15 percent less than for the project. Residential consumption would be about seven percent greater than the project. Total energy consumption would be about seven percent less than for the proposed project.

Operational traffic impacts would be less than those of the proposed project due to the decreased office space and the fewer number of on-site parking spaces provided. The number of net peak-hour person-trips (257) from this alternative would be about 40 percent less than for the proposed project. The number of Muni trips would be reduced in comparison to the project to about 110. Under Alternative Three, regional carriers would carry 40 percent fewer site related trips. Flows on sidewalks adjacent to the building would not be perceptably altered from project conditions, nor would the flows at the Pine and Front St. crosswalks. Trips to the parking facility would be reduced by approximately 50 percent in proportion to the reduction in parking spaces under this alternative. The parking deficit would be greater than that of the proposed project by approximately 20 automobiles. The occurrence of curbside loading would be reduced from project conditions. Pedestrian and service vehicle conflicts would increase approximately 35 percent because of trucks crossing the Front St. sidewalk to access the extra loading dock provided under this alternative.

The project sponsor has rejected this alternative as not providing the amount of office space permitted under the City Planning Code and proposed for the project.

D. ALTERNATIVE FOUR: CODE-CONFORMING ALTERNATIVE

This alternative would consist of a 22-story office building, about 315 ft. tall, developed on the project site. Alternative Four would be about 60 ft. shorter than the proposed project. It would contain approximately 257,000 gross sq. ft. of commercial space, representing an FAR of about 14:1. There would be two levels of retail space containing a total of 10,000 sq. ft., 19 floors of office use, and a mechanical floor. There would be no residential development on the site, and no bonus floor area would be used.

Under Alternative Four there would be no off-street vehicle parking provided on the site. Two loading docks would be accessible, at grade from Front St., to conform with the requirements of the City Planning Code (Section 152) and City Planning Commission Resolution No. 9286. There would not be a direct connection from the project to the Embarcadero Station of the Market St. subway.

This alternative would be similar to the project in design and form, and would comply with the use provision of the City Planning Code. The building tower would be shorter in length and diagonal dimension than proposed for the project; the tower would be setback along the entire site frontage on Front St. (see Figure 31, p. 145). The maximum building length would be 170 ft. and the maximum diagonal dimension would be 200 ft.; a Conditional Use authorization would not be required to exceed the bulk limitations of the Code.

Land use effects would be similar to those of the proposed project except that no residential use would be included; Alternative Four would not satisfy any of the housing demand which would be generated by on-site office space. Net housing demand would be for about 80 units, the same as for the proposed

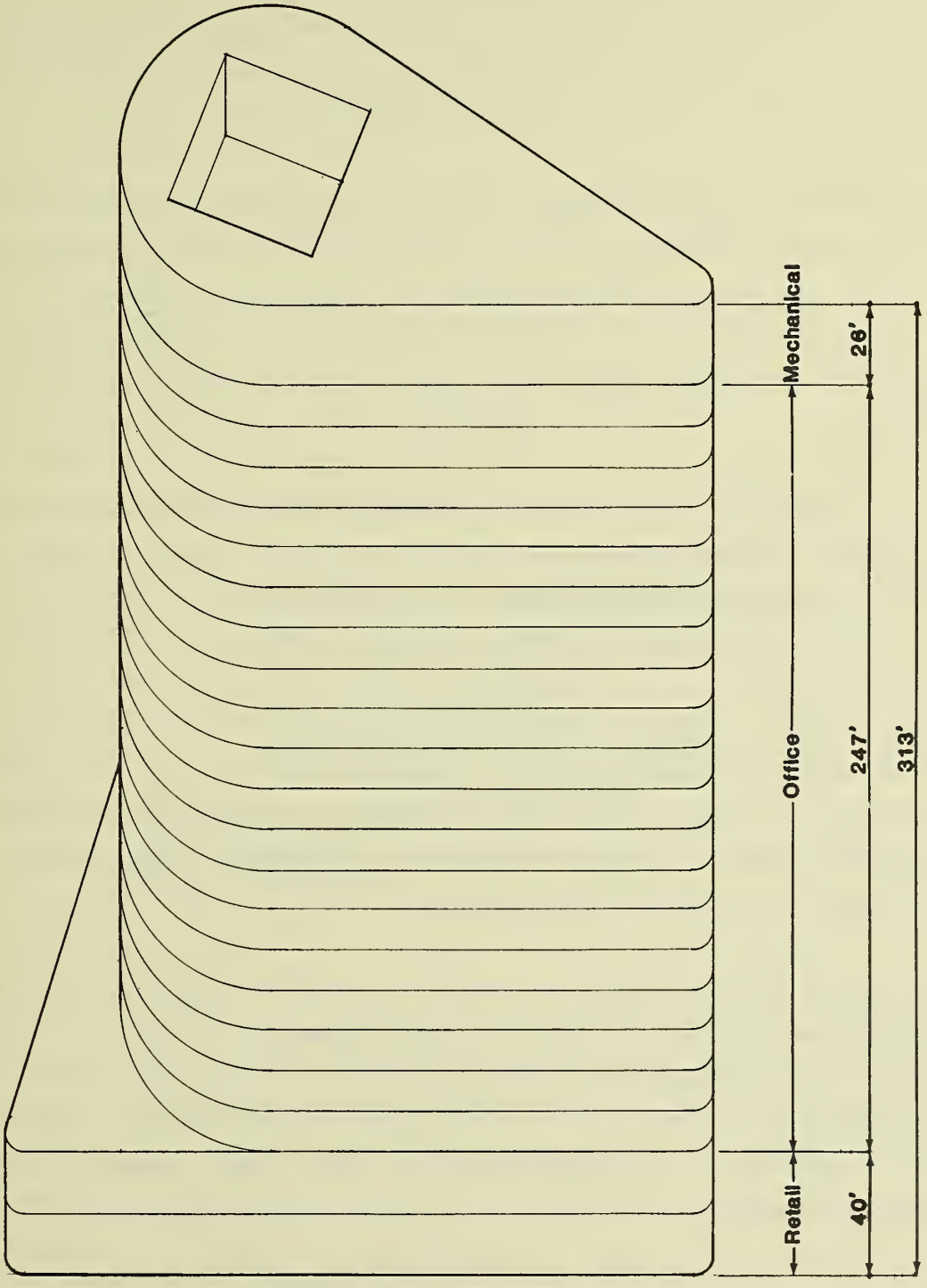


FIGURE 31: Alternative Four – Code-Conforming Alternative

SOURCE: Skidmore, Owings and Merrill

project. This alternative would not result in 24-hour activity on the site or increased demand for domestic-oriented retail services in the Financial District through the provision of residential space.

Urban design and shadow effects of this alternative would differ from the proposed project because of the decreased building height; however, the building tower would be more visible than existing structures on the site. Pedestrian-level views from near the site would be similar to those of the project as proposed except that the building bulk would be reduced along Front St.

This alternative would result in demolition of the two existing structures on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to the proposed project, although the construction period would be slightly shorter due to the decreased building size. Dewatering impacts would be eliminated under this alternative as no subsurface parking would be provided. Energy consumption impacts would be similar to the proposed project for the office portion of the building. In total, this alternative would consume about 37 percent less electricity and 25 percent less natural gas than the project because residential use would not be included.

Operational traffic impacts on Front St. would be less than those associated with the project, as no off-street parking would be provided. The estimated number of net peak-hour person-trips from this alternative would be about 440, approximately equal to that of the proposed project (425). Impacts on Muni and the regional carriers would be the same as those from the proposed project. Since no parking would be provided, the parking deficit would be approximately 430 spaces. The vehicle queue on Front St., of traffic waiting to turn left on to Pine St., would not be affected under this alternative. The frequency of curbside loading and pedestrian/vehicle conflicts would be similar to that of the proposed project.

The project sponsor has rejected this alternative as not contributing housing to partially meet existing demand in San Francisco.

E. ALTERNATIVE FIVE: OFF-STREET PARKING AND LOADING ACCESS ON PINE ST.

This alternative would develop a 25-story combined office and residential building approximately 365 ft. tall. Alternative Five would feature access to all loading and off-street parking on Pine St., rather than on Front St. as proposed for the project (see Figure 32, p. 148). Separate residential and office lobbies would be provided, but there would not be a double height public gallery through the building connecting the major building entrances. The revised ground floor plan would result in a decreased amount of requested bonus floor area and reduced residential space in comparision to the project. The sponsor would request bonuses for rapid transit access, multiple building entrances and a rooftop observation deck as described for the project (see Table 1, p. 24). Requested bonuses for sidewalk widening and shortened walking distance would total 9,200 sq. ft., about 5,300 sq. ft. less than the amount which would be requested under the proposed ground floor plan.

Alternative Five would contain about 257,000 gross sq. ft. of commercial space for an FAR of 14:1. Residential space would occupy about 80,600 sq. ft., about 5,300 sq. ft. less than proposed in the project, for an additional FAR of about 4.4:1. This alternative would contain a total of about 337,600 sq. ft. for an overall FAR of about 18.4:1. There would be one level of retail space containing about 8,000 sq. ft. and 17 floors of office space. The 19th floor would contain mechanical equipment and an athletic health club to serve as a common facility for residents and employees of the building. There would be six floors of residential use containing 54 condominiums, three fewer than for the project. As for the project, Alternative Five would require a variance from the residential rear yard requirement of Section 134 of the City Planning Code. The rooftop would contain a mechanical penthouse and a public observation deck.

Under this alternative there would be two levels of subsurface parking, accessible from a two lane ramp on Pine St. and accommodating about 45 vehicles. The parking spaces would be accessory uses to the residential and office portions of the building as proposed for the project; a revocable encroachment permit would be required to allow the subsurface parking levels to extend beneath the Pine St. and Front St. sidewalks. Two loading docks,

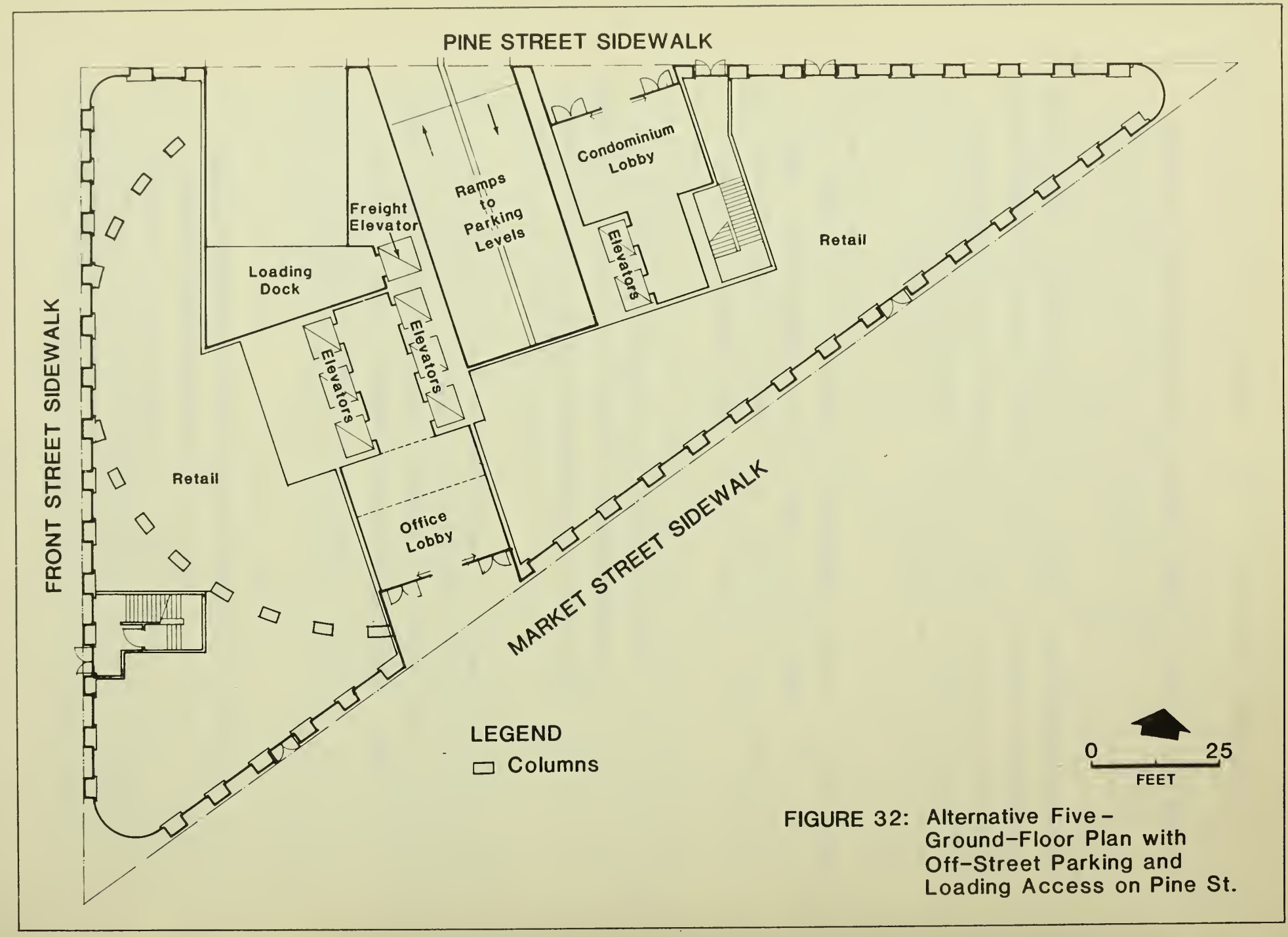


FIGURE 32: Alternative Five – Ground-Floor Plan with Off-Street Parking and Loading Access on Pine St.

accessible at grade from Pine St. would be provided to comply with the requirements of the City Planning Code and City Planning Commission Resolution No. 9286. The curb cut dimensions would not comply, however, with the requirements of Resolution No. 9286 because the combined length of curb cuts for the loading dock and parking garage would be about 50 ft., compared to a maximum allowable of 36 ft.

The impacts of this alternative would generally be similar to those described in the Environmental Impacts section of this report (see Section IV, pp. 55 - 117) for the proposed project. Net housing demand generated by this alternative would be for about 80 residential units, the same net demand as for the proposed project. The building tower would be more visible than existing structures on the site, but would be about 10 ft. shorter than the project. Urban design and shadow effects of this alternative would be similar to the proposed project.

Operational traffic impacts would be similar to the proposed project in magnitude, except that conflicts between pedestrians and vehicles would be reduced by about 25 percent. This reduction would be due to the location of project ramps to the parking garage and loading docks on Pine St. where pedestrian traffic is light. The number of net peak-hour person-trips (440) created under this alternative would be approximately the same as for the proposed project. Impacts on Muni and the regional transit carriers would be similar and represent less than one percent of overall demand. Pedestrian flows would be similar to those from the proposed project. Parking would be provided for 45 automobiles, about the same as the project. The level of service on Front St. would not be affected by this alternative.

As with the proposed project, this alternative would result in demolition of the two existing structures on the site. Transportation, air quality and noise impacts associated with building construction would generally be similar to those for the proposed project. Dewatering impacts would also be the same as for the project as two subsurface parking levels would be provided with this alternative. Energy consumption for Alternative Five would be about the same as for the office portion of the proposed project and about six percent less for the residential portion of the building.

Alternative Five has been rejected by the project sponsor because it would not permit two levels of retail use and a double height public gallery connecting Pine and Market Sts. In addition, this alternative has been rejected as not providing the maximum amount of bonus floor area for residential use which may be requested with the preferred project design.

F. ALTERNATIVE SIX: NO PROJECT

This alternative would entail no change to the site. The two existing buildings on the site, at 320 and 340 Market St. would be retained.

In general, the environmental characteristics of this alternative would be substantially as described in the Environmental Setting Section of this report (see Section III pp. 27 - 54, for a discussion of existing conditions). Transportation, air quality and noise impacts associated with building construction would not occur. Transportation, transit and air quality conditions (described in Section IV of this report) as 1984 base conditions with cumulative development, but without the project, would exist on streets around the site in 1984. There would be no change in the demand from the site for community services. The businesses now operating on the site would not have to relocate.

This alternative would preserve options for future development of the site. It is not acceptable to the project sponsor because it would not provide additional office space and residential units to partially meet existing demand in San Francisco and because it would be an economic underuse of the site.

This alternative could result in the development of other office space, possibly a high-rise building comparable to the project at another location. Development elsewhere in Downtown San Francisco would generally result in impacts as described for the project. Development at a location outside of San Francisco would probably involve an office building without on-site housing. The impacts of such a project would largely depend upon the location chosen and cannot now be accurately determined. Development of the project at

a different location has been rejected by the project sponsor because of the firm's association with the City of San Francisco, existing interests in the site and the sponsor's conviction that the project site is a prime location for housing in the City.

VIII. RELATIONSHIP BETWEEN SHORT-TERM USE OF MAN'S ENVIRONMENT AND THE ENHANCEMENT OF LONG-TERM PRODUCTIVITY

This project is part of a continuing trend of denser development in Downtown San Francisco. These developments are forming a skyline characterized by high-rise office buildings in an area that is already urbanized. This area supplies the necessary facilities that provide unique employment opportunities and the basis for the regional economy. The applicant proposes on-site housing in conjunction with office development. An amendment to the City Planning Code would be required to allow approval of Alternative One because the combined office and residential floor area would exceed the allowable FAR for this alternative. Such an amendment could have an impact on future downtown developments and may result in the provision of more housing in the Downtown.

IX. EIR AUTHORS AND CONSULTANTS; ORGANIZATIONS AND PERSONS CONSULTED

EIR AUTHORS

San Francisco Department of City Planning
45 Hyde Street
San Francisco, CA 94102
Environmental Review Officer: Alec Bash
Assistant Environmental Review Officer: Barbara Sahm
Project Coordinator: Paul Rosetter

EIR CONSULTANTS

Environmental Science Associates, Inc.
1390 Market Street, Suite 215
San Francisco, CA 94102

(Prime Consultant: Project Description, Land Use, Urban Design, Historical and Cultural, Employment, Housing and Fiscal Factors, Transportation, Air Quality, Noise, Energy, Community Services and Utilities, Geology, Seismology and Hydrology, Significant Environmental Effects, Mitigation Measures, and Alternatives to the Proposed Project.)

Nancy Cunningham Clark:	Associate-in-Charge
Marc Zeppetello:	Project Manager
Brian Woodworth:	Deputy Project Manager

University of California, Davis
(Micro-Climate Studies)
2053 Bainer Hall
Davis, CA
B. White, Professor

PROJECT SPONSOR

Honorway Investment Corp.
8279 Sugarman Drive
La Jolla, CA 92037
Kwan So

PROJECT ARCHITECTS AND ENGINEERS

Skidmore, Owings & Merrill
One Maritime Plaza
San Francisco, CA 94111
A. Rudy
J. Carlin

CITY AND COUNTY OF SAN FRANCISCO

Department of City Planning
100 Larkin Street
San Francisco, CA 94102
Gail Bloom
Ed Michael
Lois Scott

S.F. Clean Water Program
150 Hayes Street
San Francisco, CA 94101

Nathan Lee, Engineering Associate II, Division of Sewer System Design
Don Hayashi, Director, Citizens Participation

Fire Department
Support Services
260 Golden Gate Avenue
San Francisco, CA 94102
Joseph Sullivan, Chief

Police Department
Southern Station
850 Bryant Street
San Francisco, CA 94103
Paul Libert, Sergeant
Division of Planning & Research

Water Department
1990 Newcomb Avenue
San Francisco, CA 94124
Ly Wentworth, Water Serviceman, Engineering Department
Jack Kenck, Manager, Distribution Division

OTHER ORGANIZATIONS

Pacific Gas and Electric Company
245 Market Street
San Francisco, CA 94106
Alfred R. Williams, Industrial
Power Engineer
John Oliver, Associate District Engineer
Bruno Wilson, Senior Map Draftsman

X. DISTRIBUTION LIST

STATE AGENCIES

State Office of Intergovernmental Mgmt.
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

REGIONAL AGENCIES

Association of Bay Area Governments
Hotel Claremont
Berkeley, CA 94705
Attn: Charles Forrester

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109
Attn: Irwin Mussen

Bay Area Rapid Transit District
800 Madison Street
Oakland, CA 94607
Attn: Barbara Neustadter

Golden Gate Bridge Highway & Transportation District
P.O. Box 9000, Presidio Sta.
San Francisco, CA 94129
Attn: Dale Luehring

Metropolitan Transportation Commission
Hotel Claremont
Berkeley, CA 94705
Attn: Franceen Lyons

San Mateo County Transit District
400 South El Camino Real
San Mateo, California 94402
Attn: Larry Stueck

Alameda-Contra Costa County Transit District
508 - 16th Street
Oakland, CA 94612
Attn: Don Larson

CITY AND COUNTY OF SAN FRANCISCO

San Francisco Planning Commission
Department of City Planning
City and County of San Francisco
100 Larkin Street
San Francisco, California 94102
Atten: Commissioners:
Toby Rosenblatt, President,
Susan Bierman,
Roger Boas,
Norman Karasick, Alternate for Roger Boas
Eugene Kelleher, Alternate for Richard Sklar
Jerome Klein,
Yoshio Nakashima,
C. Mackey Salazar,
Richard Sklar,
Lee Woods, Commission Secretary

Landmarks Preservation Advisory Board
100 Larkin Street
San Francisco, CA 94102
Atten: Jonathan Malone

Bureau of Building Inspection
450 McAllister Street
San Francisco, CA 94102
Atten: Robert Levy, Superintendent

San Francisco Fire Department
260 Golden Gate Avenue
San Francisco, CA 94102
Attn: Joseph Sullivan, Chief, Support Services

San Francisco Police Department
850 Bryant Street
San Francisco, CA 94103
Attn: Sgt. Paul Libert, Planning and Research Division

San Francisco Department of Public Works
Traffic Engineering Division
460 McAllister Street
San Francisco, CA 94102
Attn: Scott Shoaf

San Francisco Department of
Public Works
Mechanical Section
45 Hyde Street, #222
San Francisco CA 94102
Attn: Ray Danehy

San Francisco Municipal Railway
MUNI Planning Division
949 Presidio Avenue, #204
San Francisco, CA 94115
Attn: Susan Chelone

San Francisco Committee for
Utility Liaison on Construction
and Other Projects (CULCOP)
c/o GES - Utility Liaison
City Hall, Room 363
San Francisco, CA 94102
Attn: Herman Beneke

Mayor's Economic Development Council
552 McAllister Street
San Francisco, CA 94102
Attn: Richard Goblirsch

San Francisco Public Utilities
Commission
City Hall, Room 287
San Francisco, CA 94102
Attn: Richard Sklar

San Francisco Real Estate Department
450 McAllister Street, Room 600
San Francisco, CA 94102
Attn: Mr. Wallace Wortman
Director of Property

San Francisco Water Department
Distribution Division
425 Mason Street
San Francisco, CA 94102
Attn: John Kenck, Manager

Public Utilities Commission
Bureau of Energy Conservation
949 Presidio Ave., Room 111
San Francisco, CA 94115
Attn: Flint Nelson, Director

GROUPS AND INDIVIDUALS

AIA - San Francisco Chapter
790 Market Street
San Francisco, CA 94102

Bay Area Council, Inc.
348 World Trade Center
San Francisco, CA 94111

Building Owners & Managers Assoc.
690 Market Street
San Francisco, CA 94104
Attn: Elmer Johnson

Building Service Employees Union
Local 87
240 Golden Gate Avenue
San Francisco, CA 94102

Bunker Ramo Corporation
320 Market Street, 5th Floor
San Francisco, CA 94105
Attn: Joseph Taglang, Manager

Bunker Ramo Corporation
35 Nutmeg Drive
Trumbull, Connecticut 06609
Attn: Joseph Goldman

David Caprone
Lincoln Property Company
220 Sansome Street
San Francisco, CA 94104

Citizens Savings & Loan Association
Financial District Office
350 Market Street
San Francisco, CA 94111

William Coblentz
Jacobs, Sills and Coblentz
555 California Street #3100
San Francisco, CA 94104

Joseph Coriz
2853 22nd Street
San Francisco, CA 94110

Downtown Association
582 Market Street
San Francisco, CA 94104
Attn: Lloyd Pflueger, Mgr.

Downtown Senior Social Services
295 Eddy Street
San Francisco, CA 94102

Economic Opportunity Center
District Council V
1173 Mission Street
San Francisco, CA 94103
Attn: Lee Meyerzove, Chairman

Environmental Impact Planning
319 Eleventh Street
San Francisco, CA 94103

The Foundation for San Francisco's
Architectural Heritage
2007 Franklin Street
San Francisco, CA 94109
Attn: Executive Director

Friends of the Earth
124 Spear Street
San Francisco, CA 94105
Attn: Connie Parrish

Gray Panthers
944 Market Street
San Francisco, CA 94102
Attn: W. Nunnally

Gruen, Gruen & Associates
564 Howard Street
San Francisco, CA 94105

Heller, Ehrman, White & McAuliffe
44 Montgomery Street, 32nd Floor
San Francisco, CA 94104
Attn: Richard Millard

Sue Hestor
4536 - 20th Street
San Francisco, CA 94114

Honorway Investment Corp.
8279 Sugarman Drive
La Jolla, CA 92037

Chris Lavdiotis
1919 28th Avenue
San Francisco, CA 94116

League of Women Voters
12 Geary Street, Room 605
San Francisco, CA 94108

Legal Assistance to the Elderly
944 Market Street, #803
San Francisco, CA 94102

Merrill's Drug and Discount Centers
300 Market Street
San Francisco, CA 94111

Mr. Gerald Owyang
1517 Reed Avenue, #2
San Diego, CA 92109

Mrs. G. Bland Platt
339 Walnut Street
San Francisco, CA 94118

Charles Hall Page and Associates
364 Bush Street
San Francisco, CA 94104

RIDES, Inc.
100 Van Ness Ave., 19th Floor
San Francisco, CA 94102
Attn: Charna Staten

San Francisco Beautiful
41 Sutter Street
San Francisco, CA 94104
Attn: H. Klussman, President

San Francisco Building & Construction
Trades Council
400 Alabama Street, Room 100
San Francisco, CA 94110
Attn: Stanley Smith

San Francisco Chamber of Commerce
465 California Street
San Francisco, CA 94102
Attn: Richard Morten

San Francisco Convention &
Visitors Bureau
1390 Market Street, Suite 260
San Francisco, CA 94102

S.F. Downtown Market Street
Improvement Association
17 Drum Street
San Francisco, CA 94111
Attn: Ralph Leon Isaacs

San Francisco Ecology Center
13 Columbus Avenue
San Francisco, CA 94111

San Francisco Forward
690 Market Street
San Francisco, CA 94104
Attn: Frank Nato

San Francisco Junior Chamber of Commerce
251 Kearny Street
San Francisco, CA 94104

San Francisco Labor Council
3068 - 16th Street
San Francisco, CA 94103
Attn: Bernard Speckman

San Francisco Planning and Urban
Research Association
312 Sutter Street
San Francisco, CA 94108

S.F. Retail Merchants Association
528 Market Street, Suite 101
San Francisco, CA 94104

San Francisco Tomorrow
728 Montgomery Street, Room 34
San Francisco, CA 94111
Attn: Suzanne Smith

San Franciscans for Reasonable Growth
473 Eleventh Ave.
San Francisco, CA 94118
Attn: Carl Imparato

John Sanger & Associates
2340 Market Street
San Francisco, CA 94114

Senior Escort Program
South of Market Branch
814 Mission Street
San Francisco, CA 94100
Attention: Neighborhood Coordinator

Sierra Club
530 Bush Street
San Francisco, CA 94105
Attn: Becky Evans

Skidmore, Owings & Merrill
One Maritime Plaza
San Francisco, CA 94111

Kent E. Soule
1180 Filbert Street, #204
San Francisco, CA 94109

Tenant & Owners Development Corp.
177 Jessie Street
San Francisco, CA 94105
Attn: John Elberling

Paul Thayer
1033 Stanyan
San Francisco, CA 94117

Timothy A. Tosta
333 Market St., Suite 2230
San Francisco, CA 94105

Vaughns-At Sather Gate
90 Front Street
San Francisco, California 94111

Steven Weicker
899 Pine Street, #1610
San Francisco, CA 94108

ABUTTING PROPERTY OWNERS

101 California Venture
Fireman's Insurance Co. of Newark,
New Jersey
c/o John J. Hanan
201 California Street, Suite 1400
San Francisco, CA 94111

The Continental Insurance Co.
Fidelity & Casualty Co. of New York
Fireman's Insurance Co. of Newark,
New Jersey
c/o Pacific Insurance Co.
100 Pine Street
San Francisco, CA 94111

Daon Corp.
Cadillac Fairview California, Inc.
c/o Building Management Office
444 Market Street, Suite 850
San Francisco, CA 94111

Metropolitan Life Insurance Co.
c/o Budget Control & Management, 12-Z
1 Madison Avenue
New York, NY 10010

Fremont Properties Co.
c/o S.J. Amberson
155 Sansome Street
San Francisco, CA 94104

International Business Machines, Corp.
c/o Counsel - Reconstruction Div.
1000 Westchester Avenue
White Plains, NY 10604

Pacific Gas & Electric Co.
350 Bush Street
San Francisco, CA 94104

Milton Meyer & Company
One California Street
San Francisco, CA 94111
for the following individuals and organizations:
Walter H. Shorenstein
Mutual Benefit Life Insurance Co.
333 Market Street Associates
Centraland (c/o H. Ehlers)
111 Pine Street

MEDIA

San Francisco Bay Guardian
27000 - Nineteeth Street
San Francisco, CA 94110
Attn: Patrick Douglas
City Editor

San Francisco Chronicle
925 Mission Street
San Francisco, CA 94103
Attn: Marshall Kilduff

San Francisco Examiner
110 - Fifth Street
San Francisco, CA 94103
Attn: Gerald Adams

San Francisco Progress
851 Howard Street
San Francisco, CA 94103
Attn: Mike Mewhinney

The Sun Reporter
1366 Turk Street
San Francisco, CA 94115

LIBRARIES

Documents Department
City Library - Civic Center
San Francisco, CA 94102
Attn: Faith Van Liere

Environmental Protection Agency Library
215 Fremont Street
San Francisco, CA 94105
Attn: Jean Circiello

Government Documents Section
Stanford University
Stanford, CA 94305

Government Publications Department
San Francisco State University
1630 Holloway Avenue
San Francisco, CA 94102

Hastings College of the Law - Library
198 McAllister Street
San Francisco, CA 94102

Institute of Governmental Studies
1209 Moses Hall
University of California
Berkeley, CA 94720

XI. APPENDICES

LIST OF APPENDICES

APPENDIX A: FINAL INITIIAL STUDY*

388 MARKET STREET

SAN FRANCISCO

81.195E

November 1981

* Differences among data presented in the following Initial Study and the preceding Focused EIR are attributable to the fact that the proposed project has since been modified and to the availability of additional and more precise data during the subsequent preparation of the EIR.

DEPARTMENT OF CITY PLANNING 100 LARKIN STREET · SAN FRANCISCO, CALIFORNIA 94102
(415) 552-1134

NOTICE THAT AN ENVIRONMENTAL IMPACT REPORT IS DETERMINED TO BE REQUIRED

Date of this Notice: November 13, 1981

Lead Agency: City and County of San Francisco, Department of City Planning
100 Larkin Street, San Francisco, CA. 94102

Agency Contact Person: Paul Rosetter Tel: (415) 552-1134

Project Title: 81.195E
388 Market Street Building

Project Sponsor: Honorway Investment Corp.

Project Contact Person: Kwan So

Project Address: 388 Market St. 300 block of Market St. between Pine and Front Sts.

Assessor's Block(s) and Lot(s): Assessor's Block 265, Lots 1 and 2

City and County: San Francisco

Project Description: Demolish two buildings and construct a 29-story, 400-foot building containing a total of about 401,000 sq. ft., including approximately 225,000 sq. ft. of offices, 32,000 sq. ft. of retail area and 90 residential units; providing about 80 parking spaces on 3 basement levels; requiring Conditional Use and Descretionary Review.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: November 23, 1981.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $35.00 filing fee.

Alec S. Bash, Environmental Review Officer

ER5 6/80

388 MARKET STREET BUILDING
INITIAL STUDY
81.195E

PROJECT DESCRIPTION

The project is a 29-story combined office and condominium residential building proposed to be located on the triangular block bounded by Market, Pine and Front Sts. The site contains 18,360 square feet (sq. ft.), approximately four-tenths of an acre, and includes the two lots which comprise Assessor's Block 265.

The project site is adjacent to the Embarcadero Station of the Market St. subway. It contains two structures. Both buildings are in commercial use and would be replaced by the proposed project. The building at 320 Market St. is a nine-story structure (112 ft. tall), with a drug store occupying the ground level and eight floors of office space above. The 340 Market St. building is an eight-story structure (97 ft. tall) with a subsurface parking garage. A savings bank and men's clothing store occupy the ground floor; the remaining seven floors are in office use.

North of the project site, the 48-story 101 California St. office building is under construction. Existing buildings immediately adjacent to the site are the 100 and 111 Pine St. buildings, the 444 Market St. Building, One Metropolitan Plaza (425 Market St.), 333 Market St., the Pacific Gas and Electric Company Building (77 Beale St.) and the Mutual Benefit Life Insurance Building (see Figure on following page).

The proposed project would be a 400-foot high, 29-story mixed-use office/residential building combining the following features:

- Three levels of subsurface parking (about 65,400 sq. ft., containing about 80 parking spaces) and two truck loading docks, accessible from Front St.;

- Two levels of retail space with separate lobby and elevator access to the residential and office portions of the building. The combined ground-floor and second-floor mezzanine retail space would total about 32,000 sq. ft.;

- Fifteen stories of office space (about 225,000 sq. ft.), with an average per-story gross floor area of about 15,000 sq. ft;

- Ten stories of market-rate condominiums (about 144,000 sq. ft. of residential space with approximately 90 dwelling units);

- Two levels of mechanical/building-service space. This space would consist of a mechanical service area on the floor between the office and residential use, and an additional mechanical floor above the condominium units.

Gross floor area of the lobby, retail and office space would be approximately 257,000 sq. ft., representing a Basic Floor Area Ratio (FAR) of 14:1. Housing would be provided at the rate of 640 sq. ft. of residential per 1,000 sq. ft. of office. The FAR represented by the residential portion of the project is approximately 7.8:1 A recreational facility, such as a health club, would be provided for project residents on the mechanical floor between the office and residential uses. A portion of the mechanical equipment floor to be located above the residential units would be devoted to an observation deck. There would be a rooftop garden which would serve as a common open space area for the building occupants.

The building base would be triangular in form. A setback above the second floor, at a height of about 40 ft., would be provided to define the building base; the setback would be about 50 ft. in depth at the corner of Market and Front Sts. Above this setback the project tower would be tear-shaped. A rounded, semi-circular frontage would be located along Front St. The building would narrow approaching the intersection of Pine and Market Sts. with the "prow" oriented towards the foot of Market St. The maximum diagonal dimension of the tower would be about 220 ft. Project design would feature two major building entrances to facilitate shortened walking distances, and separate

access to the residential and office portions of the building. Landscaped open space would be located at each corner of the building and at the building entrances. The project would provide direct access to the Embarcadero Station of the Market St. subway.

The site is in the C-3-O Use District and the 600-I Height and Bulk District. The allowable Basic FAR for the site is 14:1. The use of floor area bonuses applicable to the project would permit an additional 89,400 sq. ft. of floor area, exclusively for residential use. These bonuses would increase the allowable FAR by about 4.9:1, resulting in a total allowable FAR of about 18.9:1. The total gross floor area proposed for the building of approximately 401,000 sq. ft., represents an FAR of about 21.8:1. Although the building would be 200 ft. shorter than allowed in this Height District, the proposed FAR exceeds the total permitted FAR by about 3:1, so the project could not be approved by the City Planning Commission without amendments to the City Planning Code.

PROJECT CONTEXT AND OBJECTIVES

The project sponsor is Honorway Investment Corporation, a California corporation. The project sponsor has proposed more housing than would be permitted under the bonus provisions of the City Planning Code. The amount of housing proposed is based upon the sponsor's perceptions of evolving City policy.

On April 9, 1981 Mayor Dianne Feinstein submitted to the City Planning Commission an action program to encourage the development of new housing in the City. The Mayor's action program advocated mixed-use residential/office building development in the downtown and asked the Department of City Planning to create a set of permanent incentives to encourage housing by providing bonuses in floor area ratio and height in exchange for more housing. The Mayor also requested that the Department prepare an ordinance requiring developers to provide a specific ratio of housing to office development and that consideration be given to the possibility of floor area bonuses.

Guiding Downtown Development, prepared by the Department of City Planning in May 1981, is a report containing a series of regulatory proposals for managing development in downtown San Francisco. This document states that, for major office buildings, development of new housing should be required in proportion to the amount of commercial office space. The recommended housing requirement would be 640 sq. ft. of housing for every 1000 sq. ft. of office space. Under the FAR limitations of Guiding Downtown Development, in the C-3-O District, floor area bonuses of up to about 417 sq. ft. of housing for every 1000 sq. ft. of permitted office space would be allowed to be constructed on-site (maximum base FAR 12:1, bonus FAR for housing 5:1, 5 divided by 12 = 0.417). The remainder of the proposed housing requirement would have to be provided off-site or by reducing the commercial floor area of the building.

To date, no ordinance has been adopted implementing the provisions of the Mayor's action program or the Department of City Planning's Guiding Downtown Development. The City Planning Commission has, however, been requiring the provision of specified numbers of units of housing under its discretionary review powers. In the absence of ordinance requirements for the provision of housing and desiring to meet the objectives of the Mayor's action program, the project sponsor has proposed housing at precisely the ratio of 640 sq. ft. of housing for every 1000 sq. ft. of proposed office space as recommended in Guiding Downtown Development. Because of the size of the proposed condominiums, the number of residential units provided by the project would be fewer than indicated by the housing formula contained in Guiding Downtown Development.

POTENTIAL ENVIRONMENTAL EFFECTS

Potential environmental issues resulting from the proposed project include: circulation requirements and effects on existing vehicular and transit systems, on pedestrian ways, and on parking; urban design considerations and shadow effects; housing impacts generated by increased employment and provision of residential use on-site; noise impacts of pile driving during construction; wind effects; air quality impacts associated with carbon monoxide emissions from project-generated traffic; subsurface geologic

conditions; effect on the City's emergency response plan; energy consumption; and growth inducement. These issues, as well as necessary modifications to the City Planning Code which would be required for project approval, and the implications of such modifications, will be analyzed in detail in subsequent environmental documentation for the project. Potential environmental issues associated with the project that were determined in this Initial Study to be insignificant, and therefore will not be addressed in subsequent environmental documentation, are described below.

Land Use Compatibility: The project would be similar to existing and proposed land uses in the vicinity of the site except for the on-site provision of housing which is in general compliance with evolving City policy.

Noise: After completion, operation of the project, project-generated traffic, and traffic from cumulative development would not increase audible noise levels in the project vicinity. Noise insulation features would be included in the project design to comply with residential noise standards of Title 25 of the California Administrative Code.

Construction-related Air Quality: Construction activities would not increase the frequency of violations of air quality standards as monitored by the Bay Area Air Quality Management District. Violations of particulate standards are likely near the site. See page 27 for measures which would reduce temporary particulate emissions during construction.

Public Services and Utilities: The increased demand for public services and utilities attributable to the project, and cumulative development at the time of project completion, would not require additional personnel or equipment, with the exception of fire protection services in the case of a major fire or disaster.

Biology: The project would have no effect on plant or animal life as the site is completely urbanized.

Hazards: The site and the project would neither cause nor be affected by hazardous uses or health hazards.

Cultural/Historic: No known cultural resources or structures designated to be of architectural or historic importance would be affected by project implementation. See page 28 for a mitigation measure which would be applied if any artifact, structural remnant, or other type of archaeological resource were found during project excavation.

ENVIRONMENTAL EVALUATION CHECKLIST

A. GENERAL CONSIDERATIONS

	Yes	Maybe	No	N/A	Disc.
1. Would the project conflict with objectives and policies in the comprehensive Plan (Master Plan) of the City?	X				X
2. Would the project require a variance or other special authorization under the City Planning Code? (Code modification)	X				X
3. Would the project require an approval of permits from City departments other than DCP or BBI, or from Regional, State or Federal agencies?			X		
4. Would the project conflict with adopted environmental plans and goals?	X				X

The project would conflict with the density provisions of the City Planning Code. The City Planning Code is intended to implement precisely certain provisions of the Master Plan regarding building density. The basic 14:1 Floor Area Ratio (FAR) allowed by Section 124(a) of the City Planning Code would permit approximately 257,000 gross sq. ft. of space. The use of bonuses, described in Section 126 of the Code, would permit additional floor area. It is expected that bonuses described in Section 126 would permit 89,400 gross sq. ft. approximately, based on direct access to the mezzanine of the Market St. subway, provision of a second major building entrance, sidewalk widening, shortened walking distance between streets, and provision of an observation deck.

Under the limitations imposed by Ordinance 240-80, permitted bonus floor area could only be used for housing. In contrast to the 89,400 gross sq. ft. permitted as a bonus for housing, the proposed project plan includes 144,000 gross sq. ft. of housing. The project sponsor has proposed housing at precisely the ratio of 640 sq. ft. of housing for every 1000 sq. ft. of proposed office space. This is the ratio of housing recommended as the total housing requirement in the Department of City Planning's Guiding Downtown Development.

The total floor area permitted by the City Planning Code and Interim Controls, with the use of bonuses for housing, would be approximately 346,400 gross sq. ft., an FAR of 18.9:1. The project as proposed would contain about 401,000 gross sq. ft. and a total FAR of about 21.8:1; the additional floor area would be used for housing. Such a project could not be approved without amendments to Section 124(a) of the City Planning Code and Ordinance 240-80, which established the Interim Controls on the use of bonuses provided in Section 126 of the Code. Such amendments can be initiated only by the Board of Supervisors or the City Planning Commission and must be finally adopted by the Board of Supervisors. An interested property owner is not permitted to initiate such amendments, as stated in Section 302(b) of the City Planning Code. The C-3-O use district is the one in which the highest density of development is permitted. Therefore, a change of the mapped District in which the project site is situated would not permit an increased density of development. The proposed guidelines for the site in Guiding Downtown Development would permit a maximum FAR of 17:1 including an FAR of 5:1 developed as housing.

For the building tower to exceed the maximum diagonal dimension of 200 ft. allowed by Section 270 of the City Planning Code, a Conditional Use authorization would be required. Conditional Use authorizations would also be required to allow the proposed parking facility to exceed 7% of the total gross floor area of the project and, under the Interim Controls, to permit the use of bonus floor area for residential use on the site.

B. ENVIRONMENTAL IMPACTS

	Yes	Maybe	No	N/A	Disc.
1. Land Use. Would the proposed project:					
a. be different from surrounding land uses?	X				X
b. disrupt or divide the physical arrangement of an established community?			X		

The street-level retail uses and the 15 floors of office space would be similar to the uses surrounding the project and in the near vicinity. The ten floors of condominium apartments above the office floors would be the only residential use in the vicinity of the project site. Housing nearest the site is located four blocks to the north in the Golden Gateway, a multiple residential complex, four blocks to the west in two residential hotels on Kearny St., and four blocks to the south on Guy Place and Lansing St. There is no housing to the east. Housing on top of office buildings is proposed on the Dollar Block one block west of the site, in the One New Montgomery Place project three blocks to the west and in the Montgomery-Washington Building, about six blocks northwest of the project site.

	Yes	Maybe	No	N/A	Disc.
2. Visual quality and Urban Design. Would the proposed project:					
a. obstruct or degrade any scenic view or vista open to the public?			X		
b. reduce or obstruct views from adjacent or nearby buildings?	X				X
c. create a negative aesthetic effect?		X			
d. generate light or glare affecting other properties?		X			X

The project would not obstruct any scenic view or vista now available to the public as the site is surrounded by buildings as high or higher than the proposed structure. The project would block short views from the existing

buildings nearby and from the 101 California St. Building which is now under construction, as the proposed structure would be over three times as high as the existing buildings on the site. The project design is intended by the architect to visually compliment adjacent structures and to present a unifying element in the architecture of the vicinity. The proposed building would not be a prominent feature on the skyline. Drawings of the proposed building and photographs of the site will be presented in subsequent environmental documentation to enable the reader to evaluate the aesthetic impact of the project. The fenestration and types of glass intended for the building have not been determined to date; glare and light effects will be discussed in subsequent environmental documentation.

3. Population/Employment/Housing.
Would the proposed project:

	Yes	Maybe	No	N/A	Disc.
a. alter the density of the area population?	X				X
b. have a growth-inducing effect?	X				X
c. require relocation of housing or businesses, with a displacement of people, in order to clear the site?	X				X
d. create or eliminate jobs during construction and operation and maintenance of the project?	X				X
e. create an additional demand for housing in San Francisco?	X				X

The project would displace up to 600 employees and nine businesses. No housing would be displaced. To reduce existing pressures for housing in San Francisco, the project sponsor has proposed more housing than would be permitted under the bonus provisions of the City Plannning Code (Section 126) and the Interim Controls (Ordinance 240-80). Housing is proposed at the ratio of 640 sq. ft. of housing for every 1000 sq. ft. of proposed office space; this is the ratio of housing recommended as the total housing requirement in the Department of City Planning's Guiding Downtown Development.

The project would include about 90 residential units. Project office employees would create a demand for about 200 housing units in San Francisco. The extent to which project housing would meet this demand would depend on the price of the units and employee salaries. The units would probably be too costly for most project employees.

Project construction would require about 600 person-years of labor over the two-year construction period. Upon completion, the project would employ about 1,000 persons, for a gain of 400 jobs.

The project would stimulate the Bay Area economy by creating temporary and permanent employment. These new job holders would purchase goods and services throughout the region, creating new employment and income opportunities. New permanent jobs would increase the demand for housing, especially moderate-income units, throughout the Bay Area.

Changing the Planning Code to allow a higher FAR for the proposed building could be growth inducing. Such changes may allow denser in-fill development in the project vicinity, and could set a precedent for Planning Code changes in other areas of the City.

4. Transportation/Circulation. Would the construction or operation of the project result in:

	Yes	Maybe	No	N/A	Disc.
a. Change in use of existing transportation systems? (transit, roadways, pedestrian ways, etc.)	X				X
b. An increase in traffic which is substantial in relation to existing loads and street capacity?		X			
c. Effects on existing parking facilities, or demand for new parking?	X				X
d. Alteration to current patterns of circulation or movement of people and/or goods?		X			X
e. Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?		X			X
f. A need for maintenance or improvement or change in configuration of existing public roads or facilities?			X		
g. Construction of new public roads?			X		

An increase in local Municipal Railway (Muni) and regional transit patronage would occur and additional automobile trips would be attracted to the site and to the Downtown area. The project would generate a parking demand that would be met partially by on-site parking. At least one permanent parking space would be provided for each four residential units. Approximately 20 short-term parking spaces would be provided as accessory parking for office space users.

The project would require no change in the present pattern of circulation or in the configuration of existing public streets. Pedestrian use of sidewalks might increase and will require further analysis, as will the effects of the project on transit and traffic. Both project-related and cumulative transportation/circulation impacts will be given further consideration in subsequent environmental documentation.

5. Noise.

	Yes	Maybe	No	N/A	Disc.
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area?	X				X
b. Would existing noise levels impact the proposed use?			X		
c. Are Title 25 Noise Insulation Standards applicable?	X				X

Project operation would not result in noise levels in excess of those presently existing in the area. The amount of traffic generated by the project during any hour of the day, and cumulative traffic increases at the time of project completion, would cause traffic noise levels to increase by less than 1 dBA. A 1-dBA increase in environmental noise is undetectable by the untrained human ear. To produce a detectable increase in environmental noise, a doubling of existing traffic volumes would be required; traffic increases of this magnitude would not occur due to anticipated cumulative development.

A three-level parking area, to serve both the residential units and office space, and loading docks for commercial deliveries are proposed with access from Front St. Such facilities would generate additional traffic, but increased noise levels would be inaudible due to existing noise levels on Front, Pine and Market Sts.

Mechanical equipment noise is regulated by the San Francisco Noise Ordinance, San Francisco Municipal Code, Section 2909, "Fixed Source Noise Levels", which the project sponsor is committed to follow. The project site and surrounding area are zoned C-3-O. In this zone, the ordinance limits equipment noise levels to 70 dBA between 7 a.m. and 10 p.m. and 60 dBA between the hours of 10 p.m. and 7 a.m. at the property line. During lulls in traffic, mechanical equipment generating 70 dBA would dominate the site noise environment. As equipment noise levels would be limited to 60 dBA to meet the nighttime limit, they would not be audible within the sound-level context of the project. Further discussion of operational noise will not be included in subsequent environmental documentation for the project.

Typical of downtown San Francisco, the noise environment of the site is dominated by vehicular traffic noise. The Environmental Protection Element of the San Francisco Comprehensive Plan indicates a day-night average noise level (L_{dn}) of 70 dBA on Market, Pine, and Front Sts. adjacent to the site in 1974./1,2/ The Environmental Protection Element contains guidelines for determining the compatibility of various land uses with different noise environments. For residential and office uses the guidelines recommend no special noise control measures in an exterior noise environment up to an L_{dn} of 60 dBA for residential uses and 70 dBA for office uses. The exterior ground-level noise levels at the site are estimated to be 70 dBA. For this noise level, the guidelines require an analysis of noise reduction requirements and inclusion of noise insulation features in the building design. As this will be done by the project sponsor, no further analysis is needed in subsequent environmental documentation.

The California Administrative Code, Title 25, Noise Insulation Standards apply to all new residential structures, with the exception of single-family dwellings. The acceptable outdoor noise level for residential units is established as a community noise equivalent level (CNEL) of 60 dBA./3/ The exterior noise environment of the site exceeds a CNEL of 60 dBA at street level. At the upper floors of the building which are proposed for residential use, the CNEL would be less than at street level; the project would require, however, an acoustical analysis to show that the interior CNEL requirement of less than 45 dBA with the windows closed would be met. As the project sponsor has certified that the project would be constructed to conform with Title 25 Noise Insulation Standards, existing noise levels would have no significant effect and no further discussion is needed.

Project construction would require approximately two years and would involve demolition of two existing buildings, excavation, and construction of the proposed structure. These activities would temporarily result in noise levels in excess of those existing in the site vicinity when no other major building construction is taking place. The building foundation type has not yet been determined, but would probably involve foundation piledriving with an

impact-type (hammer) piledriver. Conventional unmuffled and unshielded piledrivers emit noise levels of 100 to 110 dBA at a distance of 100 ft. each time the driver strikes the pile. The quietest impact piledriver measured by the City generates noise levels of 92 dBA at 100 ft., but is not always compatible with construction requirements. Assuming noise emissions of 100 dBA at 100 ft., piledriving would be audible to people on the streets within 1,000 ft. of the project site, where not shielded by intervening buildings. In buildings surrounding the project site noise levels would reach as high as 75 to 80 dBA.

The San Francisco Noise Ordinance limits noise emissions from powered construction equipment, with the exception of impact tools, to 80 dBA at a distance of 100 ft. The project contractor would adher to this limit to ensure that all equipment, other than impact tools, would cause noise levels at the nearest building to be no greater than present maximum noise levels due to traffic and other mechanical equipment. Piledriving equipment does not comply with the provisions of the Noise Ordinance; a limitation of the hours of construction where such equipment is used may be required under the ordinance. Further consideration will be given to this issue in subsequent environmental documentation for the project. Trucking of construction material to and from the site would not cause a noticeable increase in average noise levels along haul routes because of existing traffic noise levels on the streets.

NOTES - Noise

/1/ L_{dn}, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises (noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise).

/2/ dBA is the measurement of sound units of decibels (dB). The "A" denotes the A-weighted scale which simulates the response of the human ear to various frequencies of sound.

/3/ Community noise equivalent level (CNEL) is an averaged sound level measurement based on human reaction to cumulative noise exposure over a 24-hour period. The numerical values of CNEL and L_{dn} are essentially equal for most urban noise environments.

6. Air Quality/Climate. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Violation of any ambient quality standard or contribution to an existing air quality violation?	X				X
b. Exposure of sensitive receptors to air pollutants?			X		
c. Creation of objectionable odors?			X		
d. Burning of any materials including brush, trees, or construction materials?			X		
e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally?	X				X

Concentrations of air pollutants are monitored by the Bay Area Air Quality Management District (BAAQMD) at Van Ness Avenue and Ellis St., about 0.5 mile west of the project site. San Francisco currently is a nonattainment area for ozone, carbon monoxide (CO), and total suspended particulate (TSP). Although CO standards will probably not be met with present control programs, CO problems are localized, few in number, and believed to have case-specific solutions. Ozone concentration levels will continue to decline until about 1985. Present strategies to achieve the National Ambient Air Quality Standard (NAAQS) for ozone stress hydrocarbon control from motor vehicles. The other precursor of ozone, nitrogen oxide, is considered to be adequately controlled at the present time./1/ Like CO, TSP concentrations are highly localized problems.

Two types of air quality impacts could be expected from this project: short-term impacts from construction activity and equipment operation, and long-term impacts from habitation of the structure and project-generated traffic.

Construction activities would affect local air quality for about 12 months. Dust emissions from construction activities have been estimated to be 1.2 tons per acre per month, based upon an emission factor developed by the

Environmental Protection Agency (EPA)./2/ When this monthly factor is applied to the proposed project area (0.4 acres) and construction period, a monthly emission of 0.5 tons, and an overall construction emission of 6.0 tons of particulates result. The worst-case 24-hour average concentration associated with this emission is 6,400 micrograms per cubic meter (ug/m^3) at and adjacent to the site. Although this emission factor was developed from measurements associated with land clearing, excavation and building erection, other factors, such as soil moisture levels, vehicle traffic, and construction activities used in the study case, were not representative of expected conditions for the project. The EPA emission factor is probably 5 to 20 times higher than the actual site emission factor. Therefore, the anticipated particulate concentration would be 320 to 1280 ug/m^3. The state standard is 100 ug/m^3. Dustfall can be expected at times on surfaces within 200 to 400 feet of the site under low winds; under high winds, human discomfort may occur downwind from blowing dust. Mitigation measurers, as described on p. 27, would reduce particulate emissions; however, violations of the NAAQS for TSP are likely near the site.

Paving materials, sealers, solvents, and paints used in the construction would generate hydrocarbon emissions. These emissions are controlled by the BAAQMD Regulation 8 rules./3/ These rules are part of an overall regional emissions limitation program for achieving the NAAQS for ozone.

Diesel-powered construction equipment would increase only slightly local and regional emissions of nitrogen oxides, carbon monoxide, sulfur oxides, hydrocarbons and particulates. High concentrations of some of these pollutants would occur near large sources on-site, and off-site when loading or unloading truck queues develop. Poor delivery scheduling could cause violations of the NAAQS for CO off-site.

The combined office and residential use of the building would have less impact on air quality than a single-use building because vehicle trips would be spread more evenly throughout the day; that is, peak-hour departures would be reduced. Additionally, a number of daily trips in and out of the downtown area would probably be eliminated owing to increased residential space there.

Nevertheless, project-generated traffic would incrementally degrade air quality, possibly causing CO levels to exceed the NAAQS. The potential for this can only be determined from detailed study of the project's effect on traffic. Traffic-produced emissions of other pollutants would be small and have little effect on air quality or standards.

Building emissions would arise from natural gas combustion for space and water heating and would be at roof level. Annual emissions from building operations would represent less than 5% of project related emissions. Electrical energy consumption would place an increased demand on local generation plants, possibly resulting in greater emissions from these facilities. No local impacts at the site would occur, although the regional burden of pollutants would increase slightly.

Receptors sensitive to carbon monoxide, ozone, and particulate exist in the San Francisco Bay Area. Chronic exposure to these air pollutants endangers human health, damages various types of materials, and injures broadleaf crops in agricultural areas. By contributing incrementally to the concentrations of these pollutants, and impeding attainment of regional air quality goals, the project would contribute to the chronic exposure of sensitive receptors to air pollutants.

Subsequent environmental documentation will be required to determine specific project-related and cumulative traffic air quality impacts. Other air quality effects are consistent with present programs, unavoidable, or insignificant and require no further studies.

The rounded shape of the upper 24 floors would reduce somewhat wind accelerations and the average ground velocities normally associated with high-rise structures. Because of the unusual shape of the proposed building and the complexity of urban wind patterns, wind studies will be necessary to determine the significance of these effects and will be included in subsequent environmental documentation.

The project would change shadowing patterns in the area. Shading on Pine, Front, and Market Sts. would be increased. Shadow studies will be necessary to determine the significance of these effects and will be included in subsequent environmental documentation.

NOTES - Air Quality

/1/ Bay Area Air Quality Management District (BAAQMD), 1979, Bay Area Air Quality Plan.

/2/ U.S. Environmental Protection Agency, 1977, Compilation of Air Pollutant Emission Factors. Office of Air Quality Planning and Standards, Research Triangle Park, NC.

/3/ BAAQMD, 1980, Rules and Regulations, Bay Area Quality Management District, San Francisco, CA

7. Utilities and Public Services. Would the proposed project:
   a. Have an effect upon, or result in a need for new or altered, governmental services in any of the following?

	Yes	Maybe	No	N/A	Disc.
fire protection	___	___	X	___	X
police protection	___	___	X	___	X
schools	___	___	X	___	X
parks or other recreational facilities	___	___	X	___	X
maintenance of public facilities	___	___	X	___	___
power or natural gas,	___	___	X	___	X
communications systems	___	___	X	___	X
water	___	___	X	___	X
sewer/storm water drainage	___	___	X	___	X
solid waste collection and disposal	___	___	X	___	X

The project would incorporate more-extensive fire protection measures than most existing buildings have in order to comply with more-stringent Code standards now in effect. The project would increase the building area and the number of persons using the site. The introduction of residential uses would increase the fire hazard over that for office uses. Station No. 13, located

at 530 Sansome St. would be the primary response station for fire protection and emergency services. The project would not require additional personnel or equipment by the Fire Department, except in case of a major disaster. Present hydrant availablity and fire flows are adequate./1/

The project would incorporate all emergency response systems stipulated by the Life Safety Code, including fire alarms, an emergency communication system, an emergency power supply and an on-site emergency water supply. These measures would reduce hazards to building occupants during an earthquake or fire.

The project would increase population and private property on the site, thus increasing the opportunity for crime. The project site is within the Southern Police District with headquarters at 850 Bryant St. The area is patrolled 24 hours a day by radio-dispatched patrol cars. There are no foot beats in the area immediately surrounding the site. The Police Department does not anticipate a need for additional personnel or equipment to serve the project at this time. If statistics indicate such a need at a later time more personnel would be assigned to patrol the area./2/ Appropriate mitigation measures (alarms, adequate lighting at entryways, security personnel, closed-circuit camera systems, and separate secured entrances for residential areas) would reduce the effects of the project on the Police Department.

San Francisco schools are currently losing student population and would be able to serve any additional students generated by the project./3/

The project would generate a demand for urbanized recreational facilities, such as plazas and city parks with benches, and exercise clubs and indoor sports. The 101 California St. Plaza will be located one block north of the site and the Mutual Benefit Life Plaza is one block to the east. A recreational facility, such as a health club, would be provided for project residents on the mechanical floor between the office and residential units. There would be a rooftop garden of about 7,800 sq. ft., which would serve as common open space for the building occupants. The project would have no direct effect on the maintenance of public facilities.

The project would result in a net increase in consumption of energy on the site. The project would conform to California Energy Commission standards for residential and nonresidential buildings. The project would require multiple substreet transformer vaults. There are existing electrical and high and low pressure natural gas facilities in the streets surrounding the site. Street trenching would be required. The street chosen for utility connection depends on the final design load. No gas or electricity supply problems are anticipated./4/

The project would result in increased use of communication systems. There are communications facilities in all streets surrounding the site. Connections would probably occur from Pine St. No supply or capacity problems exist and no significant effects would result./5/

The project would result in a net increase in water use at the site of about 46,000 gallons per day (gpd). The project site is served by two water mains: an 8-inch diameter main on the east side of Front St. and a 6-inch diameter main on the north side of Pine St. Existing mains have sufficient capacity to handle the additional demand and no supply problems are anticipated. /6/

The project would generate an estimated wastewater flow increase of 46,000 gpd. The site is presently served by three combined sanitary and storm sewers; a 12-inch diameter sewer on Front St., a 24-inch diameter sewer on Pine St. and a 24-inch diameter sewer on Market St. Sewer connections would likely be on either Pine St. or Front St. Existing sewers would have sufficient capacity to handle the additional flows./7/ Project-generated wastewater flows represent about 0.01% of the average daily flows of 65 million gallons per day (MGD) currently being treated at the North Point Water Pollution Control Plant, and about 0.008% of the projected 85 to 90 mgd treatment capacity of the Southeast Water Pollution Control Plant which will go into interim operation in 1982. Flows to the North Point plant, which currently serves the site, would be directed to the Southeast plant at that time. North Point would then become a storm-flow treatment facility. No expansion of the present wastewater collection and treatment system would be required to serve the project./8/

When in operation the project would generate a net increase in solid waste of about 3.25 tons per day. Golden Gate Disposal Company, which currently serves the site, anticipates no problem in meeting collection demand./9/ Disposal of municipal solid wastes presently occurs at a landfill site in Mountain View. The contract with this facility expires in October 1983. The City is presently negotiating with other landfill sites to accept San Francisco's solid waste on an interim basis until a solid waste program is implemented in late 1986. The solid waste program would consist of intensified recycling, a resource recovery project generating electricity from the burning of solid wastes, and landfill disposal of bypass and residue wastes from the resource recovery process. The project and cumulative development are not excepted to present problems in solid waste disposal upon implementation of the solid waste program./10/

NOTES - Utilities and Public Services

/1/ Chief Joseph Sullivan, Chief Support Services, San Francisco Fire Department, written communication, June 23, 1981.

/2/ Paul Libert, Sergeant, Division of Planning & Research, San Francisco Police Department, telephone comunication, June 24, 1981.

/3/ Robert Haslam, Property Management Department, San Francisco Unified School District, oral communication, September 15, 1981

/4/ This paragraph is based on telephone communications with Alfred Williams, Industrial Power Engineer, PG&E, John Oliver, Associate District Engineer, PG&E, and Bruno Wilson, Senior Map Draftsman, PG&E, June 30, 1981.

/5/ Robert Richards, Facilities Engineer, Pacific Telephone and Telegraph Company, telephone communication, July 2, 1981.

/6/ This paragraph is based on telephone communications with Cy Wentworth, Water Serviceman, Engineering Department, San Francisco Water Department, June 24, 1981, and Jack Kenck, Manager, Distribution Division, San Francisco Water Department, October 28, 1981.

/7/ Nathan Lee, Engineering Associate II, Division of Sewer System Design, San Francisco Clean Water Program, telephone communication, June 24, 1981.

/8/ Don Hayashi, Director, Citizens Participation, San Francisco Clean Water Program, telephone comunication, June 24, 1981.

/9/ Fiore Garbarino, Treasurer, Golden Gate Disposal Company, telephone communication, June 24, 1981.

/10/ David Cohen, Office of Special Projects, City of San Francisco, oral communication, September 20, 1981

8. Biology.

	Yes	Maybe	No	N/A	Disc.
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?			X		
b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?			X		
c. Would the project require removal of mature scenic trees?			X		

9. Land. (topography, soils, geology) Would proposed project result in or be subject to:

	Yes	Maybe	No	N/A	Disc.
a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site? (slides, subsidence, erosion, and liquefaction)		X			X
b. Grading? (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops)		X			X
c. Generation of substantial spoils during site preparation, grading, dredging or fill?		X			X

No site specific soils analysis has been made. Data pertaining to the adjacent 101 California St. Building indicate that the site is directly underlain by artificial fill and soft Bay mud deposits which are compressible and unsuitable as a foundation base. All large buildings in the project locality are supported by piles driven into deeper geologic materials capable of bearing heavy loads. Analysis of the site soils would be undertaken by a geotechnical consultant. Recommendations from a geotechnical study would be followed in the final design of the project.

The only grading on the site would be related to foundation preparation and the results would not be visible upon completion of the project. Demolition of the existing structures and excavation would result in the removal of

brick, concrete, and fill material from the site. Any material removed would be disposed of in an officially approved disposal site. A discussion of grading and foundation design will be included in the subsequent environmental documentation for the project.

10. Water. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Reduction in the quality of surface water?			X		
b. Change in runoff or alteration to drainage patterns?			X		
c. Change in water use?	X				X
d. Change in quality of public water supply or in quality or quantity (dewatering) of ground water?		X			

On-site water consumption would increase by about 46,000 gallons per day (gpd). Project-related excavation would extend below groundwater level and dewatering would be required during construction. The extent and effects of dewatering will be discussed in the subsequent environmental documentation for the project.

11. Energy/Natural Resources. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Any change in consumption of energy?	X				X
b. Substantial increase in demand on existing energy sources?		X			X
c. An effect on the potential use, extraction, conservation or depletion of a natural resource?		X			X

The project would result in a net increase in energy consumption on the site because of the greater building area to be served. The project would conform to energy requirements of Title 24 of the California Administrative Code so that energy use per square foot of floor area would be less than at present. As specific building designs have not been developed, the amount of total

energy consumption and unnecessary, wasteful or inefficient uses of energy cannot be identified.

There would be an increase in peak-hour electrical demand resulting from elevator use in addition to the peak-hour demand characteristics of other uses in the structure. Other aspects of electrical and natural gas demand characteristics cannot be identified until a more precise building design is developed. Energy consumption will be discussed further in subsequent environmental documentation for the project.

The potential for shadows from the structure to reduce the feasibility of future active solar energy collection installations in some locations off-site will be studied in subsequent environmental documentation. No existing (or proposed) active solar energy collection installations would be affected as none are located (or anticipated) in the immediate area north of the site. No other natural energy resources would be directly affected.

12. Hazards. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety?			X		
b. Creation of or exposure to a potential health hazard.			X		
c. Possible interference with an emergency response plan or emergency evacuation plan?		X			X

The project would increase the City's daytime population; residents and employees of the proposed building would contribute to congestion if an emergency evacuation of Downtown were require. The potential impact of the project on the City's emergency response plan will be considered in subsequent environmental documentation.

13. Cultural. Would the proposed project:

	Yes	Maybe	No	N/A	Disc.
a. Include or affect a historic site, structure, or building?	___	___	X	___	X
b. Include or affect a known archaeological resource or an area of archaeological resource potential?	___	___	X	___	X
c. Cause a physical change affecting unique ethnic or cultural values?	___	___	X	___	___

The site contains no buildings rated to be of major architectural importance in the 1979 survey conducted by the Foundation for San Francisco's Architectural Heritage and published in Splendid Survivors. No structures included in the City's official list of Architectually and/or Historically Significant Buildings, adopted by the City Planning Commission on May 29, 1980, exist on the site.

The project site was once part of Yerba Buena Cove. A map prepared by and on file at the San Francisco Maritime Museum shows a ship, the Callao, in the intersection of Pine and Davis Sts., but none on the site. Scattered artifacts of historic interest may be found. See Section C below for a mitigation measure to be appled in the event of such a finding.

C. MITIGATION MEASURES:	Yes	No	Disc.
Are mitigation measures included in the project?	X	___	X
Are other mitigation measures available?	X	___	___

A number of mitigation measures have been included in the project as designed to date. They are described below.

INCLUDED IN THE PROJECT

1. The project proposes to provide approximately 90 residential condominium units on-site. The size of these units would vary to provide for a diverse market sector. Project housing would help mitigate increased demand on the city's housing supply which may be generated by the project's office development.

2. Pedestrian amenities including street trees, two levels of retail use and landscaped open space would be located at each corner of the building and at the building entrances. To reduce pedestrian congestion on sidewalks surrounding the site, the project includes multiple building entrances, widened sidewalks and a direct connection to the Market St. subway.

3. To reduce the parking demand generated by the project, long term parking in excess of the required ratio of one space for every four dwelling units would be provided for building residents. Approximately 20 spaces would be used for short-term parking for visitors to the office building.

4. To mitigate traffic congestion by the project, the sponsor would encourage transit use through the sale on-site of BART and Muni passes to employees, and by encouraging employee carpool and vanpool systems in cooperation with RIDES for Bay Area commuters.

5. Two off-street loading docks would be provided, thereby reducing on-street commercial deliveries and their associated congestion on streets surrounding the site.

6. During the construction period, construction truck movement would be limited to the hours between 9 A.M. and 4 P.M. to minimize peak-hour traffic conflicts.

7. The project sponsor would contribute as appropriate to an established Downtown transit assessment district, which would mitigate potential peak-hour transit congestion associated with project development.

8. The project contractor would muffle and shield intakes and exhaust, shroud or shield impact tools, and use electric-powered rather than diesel-powered construction equipment, as feasible.

9. The project contractor would limit piledriving to the hours resulting in the least disturbance to neighboring uses, such as 4:00 p.m. to 10:00 p.m. This would require a night-work permit from the Department of Public Works. The project sponsor and project contractor would meet with the Bureau of Engineering to determine additional necessary and feasible measures to reduce noise during the period that piledriving would occur.

10. During excavation, unpaved demolition and construction areas would be wetted at least twice a day to hold down dust; this would reduce particulate emissions (dust) by about 50%. A solid fence would be provided around the construction site to further reduce dust.

11. The project contractor would maintain and operate construction equipment in such a way as to minimize exhaust emissions. During construction, trucks in loading or unloading queues would be kept with their engines off when not in use to reduce carbon monoxide emissions. The project sponsor would meet with the Department of Public Works to discuss and agree upon a scheduling program to minimize the queuing of construction vehicles.

12. The project contractor would use water-based or latex paints on all interior drywalls painted, rather than oil-based paints which emit hydrocarbons while drying. This would reduce hydrocarbons from drying paint by about 60%

13. When in operation, the project would provide internal security measures to reduce the demand on police services. These measures would include a closed-circuit TV system, security guards, well-lighted entries, alarm systems, and separate entrances for residential areas of the building with call-telephones and computerized lock systems.

14. The project would incorporate low-flow faucet, shower and toilet fixtures to reduce water consumption and wastewater generation.

15. The building would be equipped with a trash compactor to reduce the volume of solid waste requiring storage and transport. Separate storage facilities for recyclable waste material would be provided for both office and residential uses.

16. A detailed foundation and structural design study would be conducted for the building by a licensed structural engineer and a geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project.

17. Whenever possible, office suites would be equipped with individualized light switches, time clock operation, and fluorescent lights to conserve electric energy. Residential units would have individually metered gas, water and electric services to provide incentive to reduce energy consumption.

18. The heating, ventilating and air conditioning (HVAC) system would be equipped with an economizer cycle to use outside air for cooling, as feasible. Apartments would have windows that would open for natural ventilation.

19. Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist to help the Office of Environmental Review determined the significance of the find and whether feasible measures, including appropriate security measures, could be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

D. ALTERNATIVES:

	Yes	No	Disc.
Were other alternatives considered:	X		X

A major alternative considered is development of the site with the same amount of office space as proposed under the project, but with a reduced amount of housing. Maximum bonuses permitted under existing Interim Controls would be

applied for residential use. This alternative would result in a Basic FAR of 18.9:1. Modification of the City Planning Code would not be required.

Another alternative considered is a building consistent with the policy described in Guiding Downtown Development, published by the Department of City Planning in May 1981. Under this alternative an FAR of 12:1 would be permitted for office space with an additional FAR of 5:1 provided for residential use. Other alternatives which will be considered in subsequent environmental documentation include: an office building with a Basic FAR of 14:1 that would not use any of the bonuses permitted under the Interim Controls and would not provide residential use; an office building with a Basic FAR of 14:1 that would apply maximum bonuses allowed under the City Planning Code, without the Interim Controls, for additional office space and would not provide residential use; and the no-project alternative.

E. MANDATORY FINDINGS OF SIGNIFICANCE:

	Yes	No	Disc.
1. Does the project have the potential to degrade the quality of the environment substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?	___	X	___
2. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmetal goals?	___	X	___
3. Does the project have possible environmenal effects which are individually limited, but cumulatively considerably?	X	___	___

	Yes	No	Disc.
4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___
5. Is there a serious public controversy concerning the possible environmental effects of the project.	___	X	___

APPENDIX B: WIND-TUNNEL STUDY

388 MARKET STREET BUILDING

1. MODEL AND WIND-TUNNEL FACILITIES

Model

A 1/50 scaled model of the downtown San Francisco area surrounding the proposed building site for several blocks in all directions was provided by ESA, Inc. The model was capable of having three configurations (existing setting, proposed project and Alternative One) each available for separate wind-tunnel testing.

Wind-Tunnel Facilities

An environmental wind tunnel was built for testing natural atmospheric boundary layer flows past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 ft.), a test section of 1.22 m (4 ft.) wide by 1.83 m (6 ft.) high and has an adjustable false ceiling. Wind speeds within the tunnel can be varied from 1 to 4 meters per second (m/s) or 4.8 to 19.3 miles per hour (mph).

The atmospheric boundary layer flow over the downtown area was simulated by an upwind network of turbulence generators. The wind tunnel's false ceiling was adjusted to provide a zero-pressure-gradient downstream flow. The adjustment

of the flow to zero-pressure-gradient flow is known to properly model atmospheric boundary layers near the surface of the earth. The long flow development length allows a naturally turbulent boundary layer to develop and properly models the full-scale flow.

2. TESTING PROCEDURE

The wind study was divided into two parts: flow visualization and wind-speed measurements. The flow visualization observations were performed by injecting a continuous stream of smoke at various near-surface locations. The subsequent motion of the smoke was recorded and prevailing wind directions determined. Wind-speed measurements were made at 20 surface locations using a hot-wire anemometer, an instrument that directly relates rates of heat transfer by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. Both the mean wind speeds and corresponding turbulence intensities were measured. Thus, high wind speeds and gustiness (large variable changes in wind speeds over short changes in time) could be detected. Hot-wire measurements made close to the surface have an inherent uncertainty of $\pm$ five percent of the true values.

Calibration measurements were made before and after each series of hot-wire experiments. The calibration was accomplished by means of a Thermo-System Incorporated (TSI) Model #1126 hot-wire anemometer calibrator especially designed for low-wind speeds. The calibration is accurate to $\pm$ one percent. The flow above the model was adjusted to nearly the same wind speed of 3.43 m/second (11.3 ft/sec or 7.67 mph) for all experiments. The ratio of near surface speed to freestream wind speed was calculated from the hot-wire measurements and is presented on the attached figures.

Experiments were performed for three prevailing wind directions (west, northwest and southwest) for the existing setting, proposed project and Alternative One. These wind conditions are the most common in San Francisco, and are therefore the most representative for evaluation purposes. All hot-wire measurements were taken at the same series of surface points around the building for all three wind directions and the structural configurations.

3. TEST RESULTS AND DISCUSSION

The measured wind speeds are expressed as normalized percentage of the freestream wind-tunnel speed where 1.0 represents a wind speed equal to 100 percent of the freestream value. The numerical ratios displayed on the figures can be approximately interpreted by using the following scale presented in Table B1. The assessment of wind impact on the surrounding settings is preliminary and should be construed only as an estimate of the projected actual wind environment. The scale presented in Table B1 is subjective.

TABLE B1: RELATIVE INTENSITY OF SURFACE WINDS

Intensity of Wind Speed	Percentage of Freestream Speed
Low	0.00 - 0.19
Moderately low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately high	0.50 - 0.69
High	0.70 - 1.00
Very high	over 1.00

It should be noted that the plotted values are not actual wind speeds but ratios. Thus, a point having "very high" wind speed could still experience light winds on a near-calm day. Likewise, a point found to have "low" wind speed could experience relatively high winds on a windy day.

West Wind

(i) Setting. The existing near surface wind speeds are low or moderately low at all measured locations. The following features characterize wind environment: (a) The wind accelerates from low to moderately low values along Market St. from Mechanic's Plaza with speed wind ratios of 0.10 - 0.12 to 0.26 along the sidewalk at the Shaklee Terraces (444 Market St.); (b) Wind along Market St. south of 388 Market St. experiences a rapid deceleration-acceleration from 0.17 occurring at the Front St. corner to 0.09 occurring midway and south of 388 Market to 0.22 occurring at the Pine-Market Sts. intersection; (c) A vertical vortex forming off of the building at 111 Pine St. turns some of the wind south on Front St.; and (d) Vertical vortices are formed off the west and east corners of 101 California St.

(ii) Impact of Project. The presence of the proposed building would result in two minor changes: (a) The wind along Market St. south of the proposed building would not experience the rapid deceleration-acceleration observed in the existing wind environment, but the wind speeds would remain more constant; and (b) No vertical vortex would form off the southeast corner of the 101 California St. building. All wind speed ratios would be low or moderately low in magnitude.

(iii) Alternative One. The presence of the alternate building would result in generally the same wind environment as that created by the proposed building except the wind along Market St. south of the site would be nearly constant.

Northwest Wind

(i) Setting. The existing near surface wind speeds are low or moderately low at all measured locations. Wind along Market St. adjacent to the Shaklee Terraces experiences a local acceleration from a wind ratio of 0.14 on Mechanic's Plaza to 0.24 along the Shaklee Terraces to 0.14 at the Front-Market Sts. intersection.

(ii) Impact of Project. The presence of the proposed building would result in the following changes: (a) Nearly a doubling of the wind speed, from 0.13 to 0.24, at the northeast corner of the proposed building on the Pine-Market Sts. intersection; (b) A more than doubling of the wind speed, from 0.13 to 0.33, at the Beale-Market Sts. intersection; (c) An approximate 50 percent increase at the Fremont-Market Sts. intersection and along Fremont St. All of these changes would be caused by channeling of the winds around the proposed building and onto Beale and Fremont Sts. These streets nearly align with the northwest wind direction.

(iii) Alternative One. The presence of the alternate building would result in generally the same wind environment as that created by the presence of the proposed building except for an approximate 10-20 percent increase of wind speeds along Beale and Fremont Sts. and at the Pine and Market Sts. intersection.

Southwest Wind

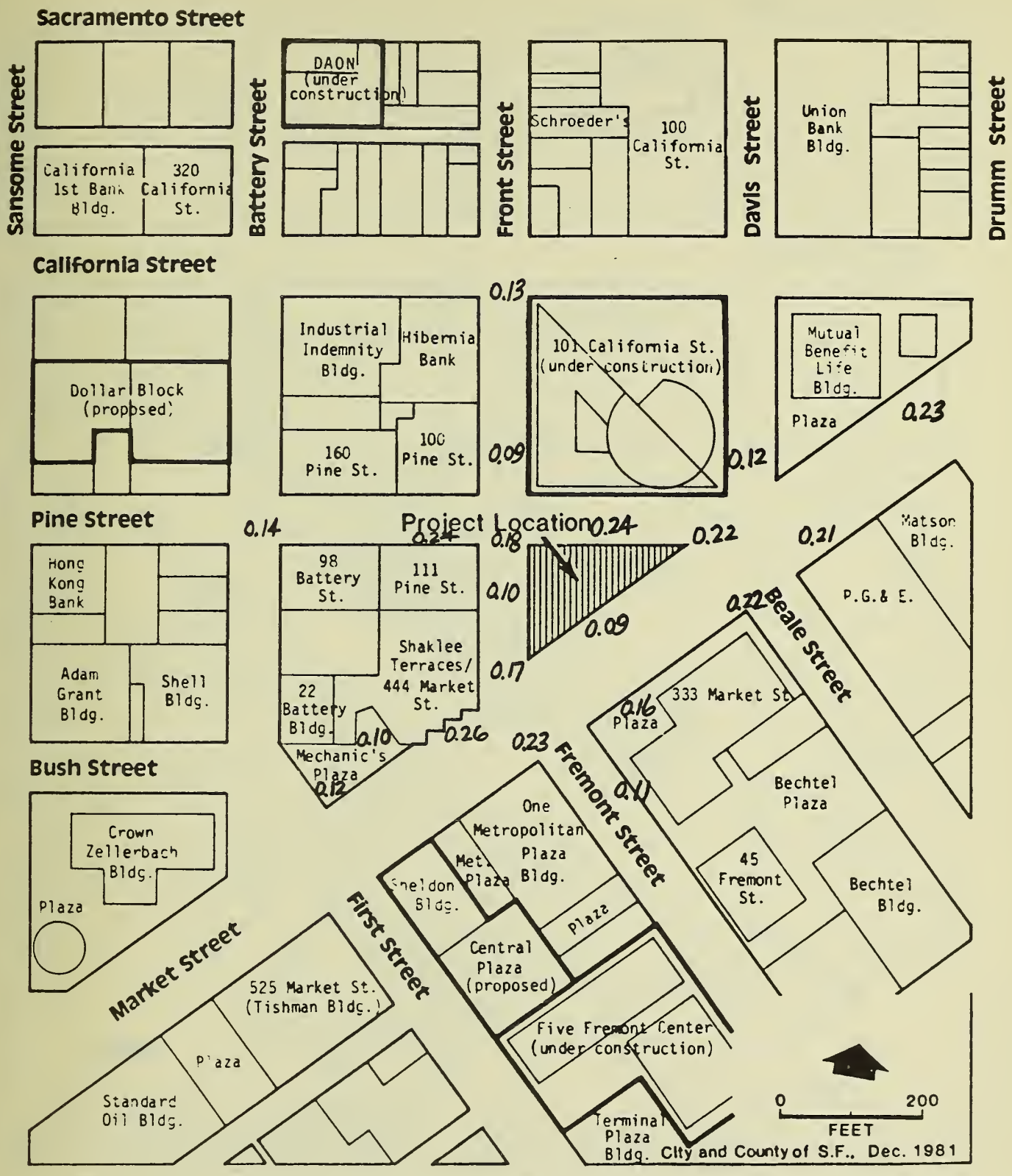
(i) Setting. The existing near surface wind speeds are low or moderately low at all measured locations. Winds across Market St. at Davis-Beale Sts. and near Front-Fremont Sts. at the Shaklee Terraces experience rapid changes in magnitudes from 0.10 to 0.26 and 0.23 to 0.09, respectively. The magnitude of the winds immediately around the existing building are all low.

(ii) Impact of Project. The presence of the proposed building would result in the following changes: (a) Wind speed along Front St. both north and south of Pine St. would be effectively doubled to 0.21; (b) Wind on the plaza at the Market-Fremont Sts. intersection would decrease 42 percent from 0.24 to 0.14; and (c) Wind along Market St. would increase 65 percent southwest of Drumm St., from 0.17 to 0.28.

(iii) Alternative One. The presence of the alternate building would result in generally the same wind environment as that created by the presence of the proposed building, except that the wind speed ratio along Market St. southwest of Drumm St. would increase to 0.31.

4. MITIGATION MEASURES

The three most undesirable changes in the wind environment due to the presence of the proposed building all occur for the northwest wind. The three changes are: (a) An approximate doubling of the wind speed, from 0.13 to 0.24, at the northeast corner of the proposed building on the Pine-Market Sts. intersection; (b) A more than doubling of the wind speed from 0.13 to 0.33, at the Beale-Market Sts. intersection; and (c) An approximate 50 percent increase at the Fremont-Market Sts. intersection and along Fremont St. While these three changes are probably not minor they are not major or severe in extent. Mitigating measures that should substantially reduce or eliminate the moderate wind speeds at the Beale-Market Sts. intersection would be the construction of small structures that could function as windbreaks along the sidewalks. They could include, but are not limited to, mature street trees, kiosks for newspapers, flower vendors, telephone booths or low (10 - 15 ft. high) street side planters beside the proposed building on Front St. The moderately low wind flow through the other two intersections would also be reduced by the construction of small structures that could serve as wind breaks similar or the same as those aforementioned.



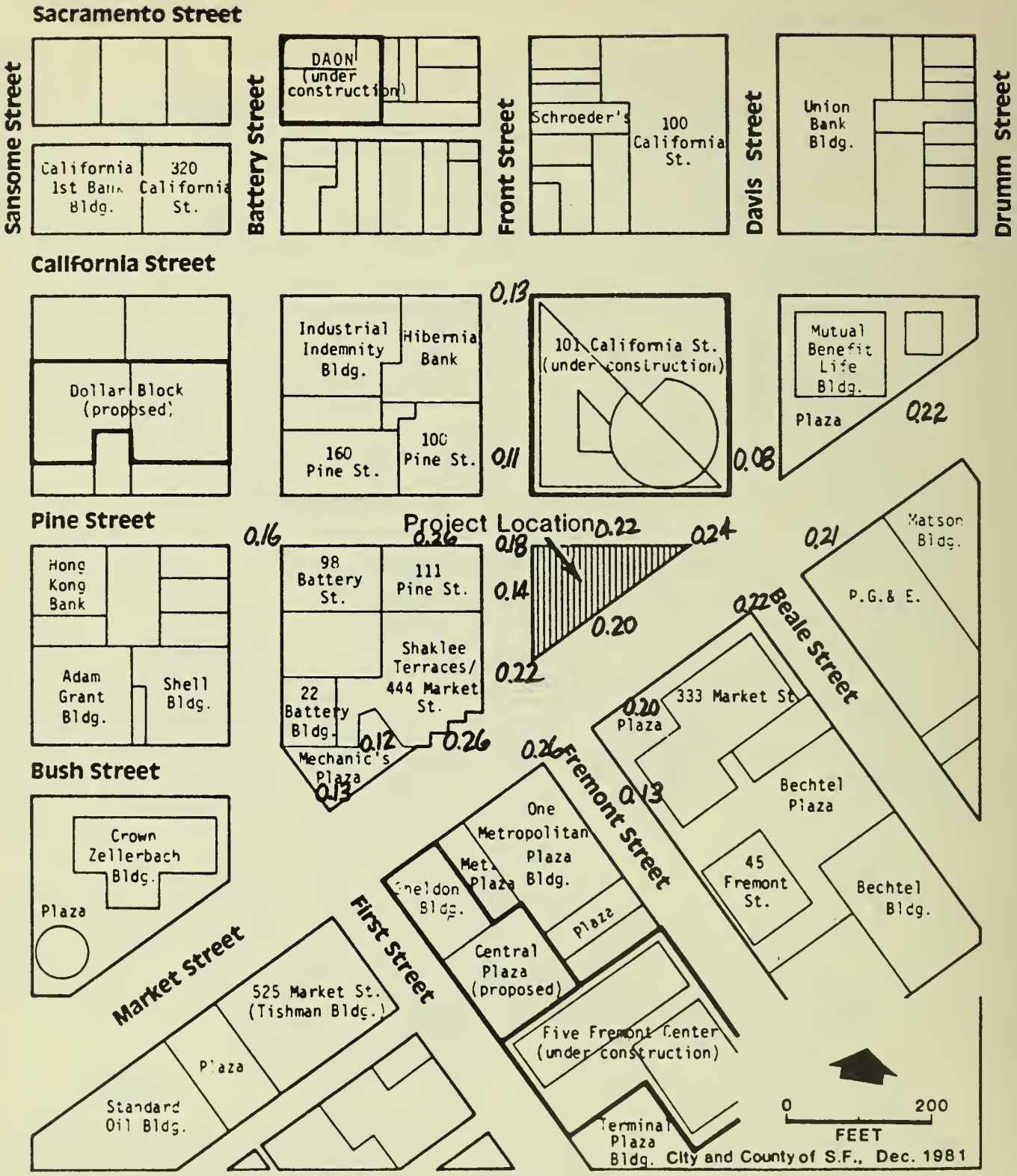
Legend

Project Location

Sites Under Development

FIGURE B1: Wind Speed Ratios for West Wind - Existing Conditions

SOURCE: Environmental Science Associates, Inc.



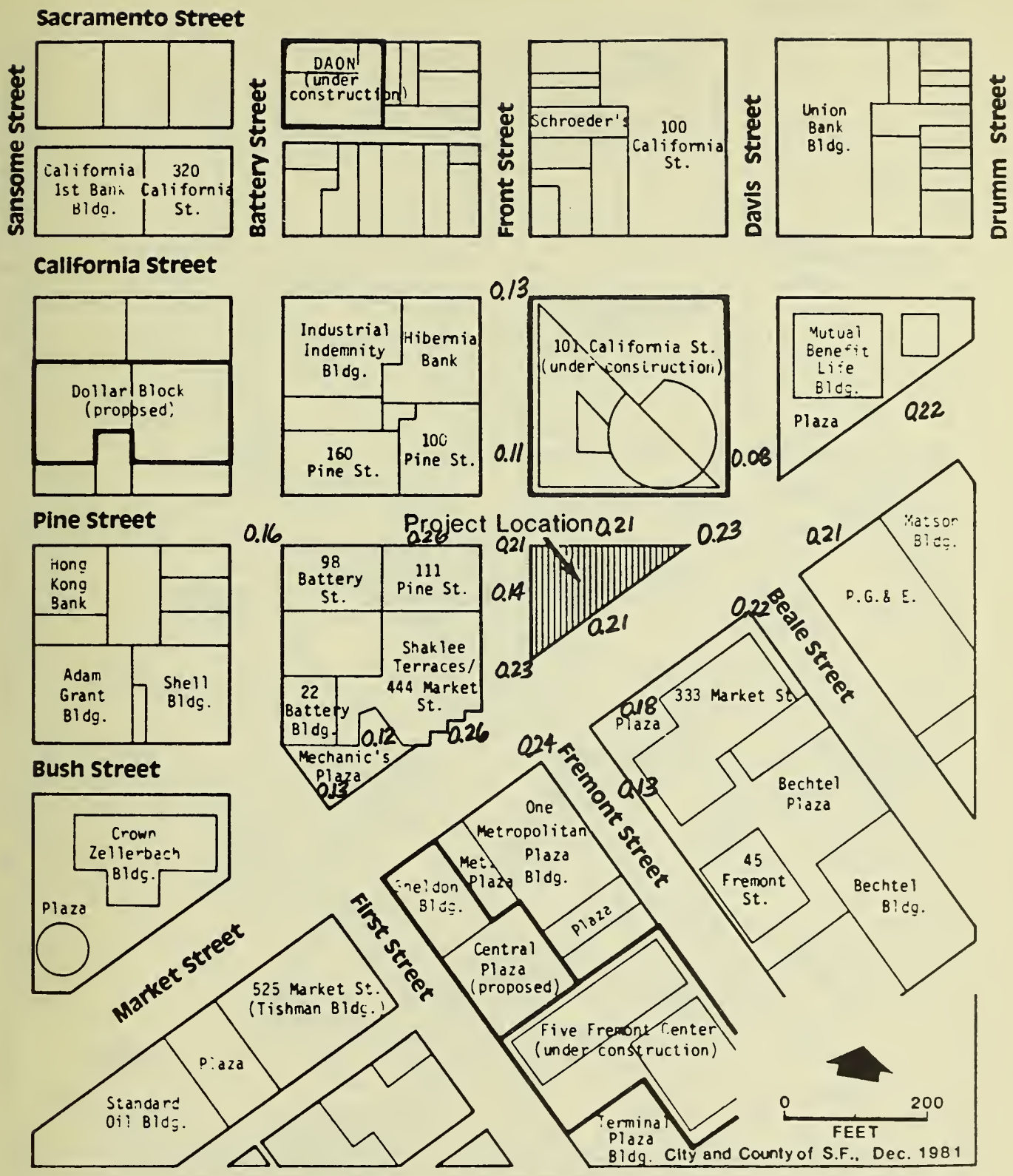
Legend

Project Location

Sites Under Development

FIGURE B2: Wind Speed Ratios for West Wind - Project

SOURCE: Environmental Science Associates,Inc.



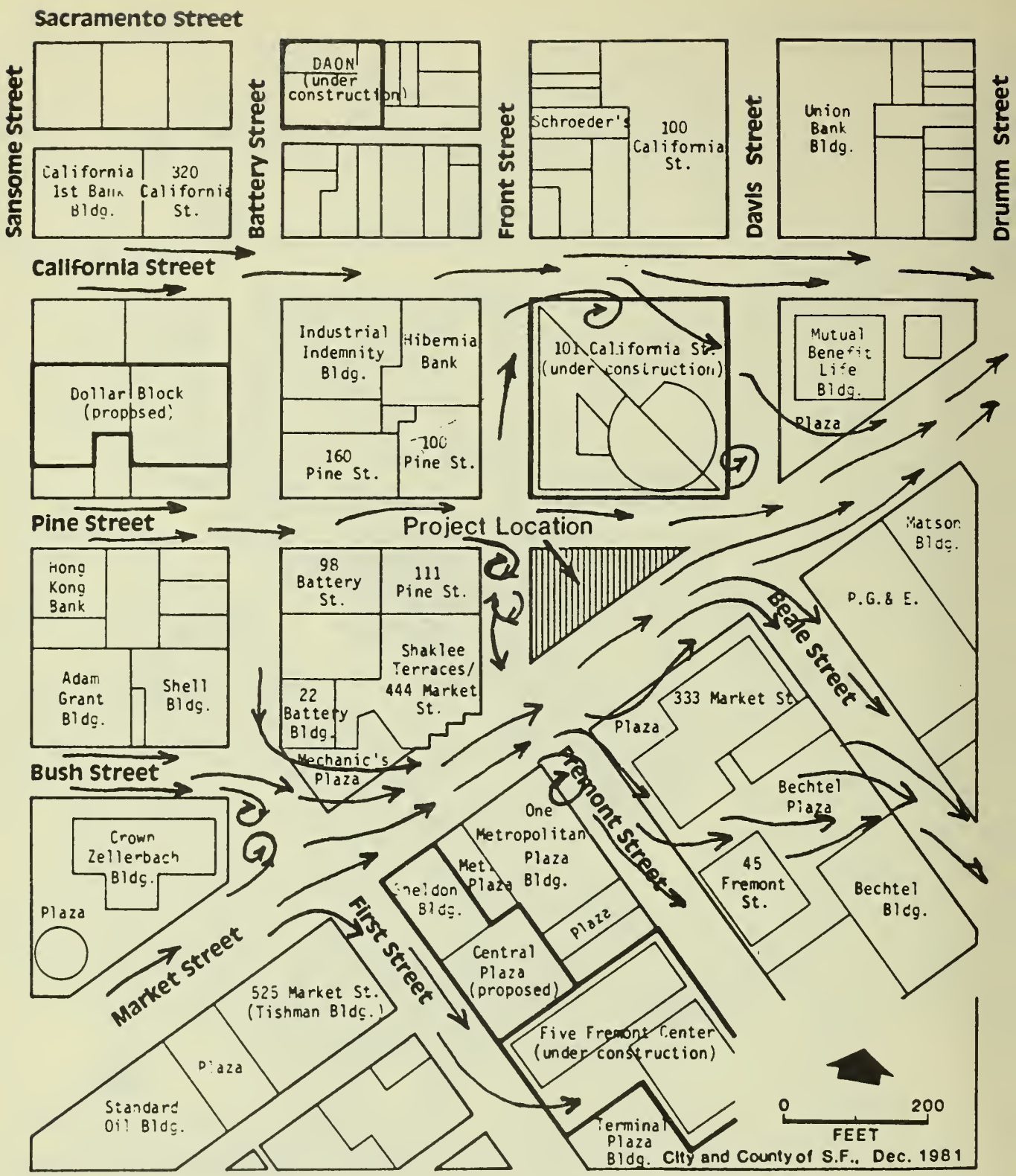
Legend

Project Location

Sites Under Development

FIGURE B3: Wind Speed Ratios for West Wind - Alternative One

SOURCE: Environmental Science Associates,Inc.



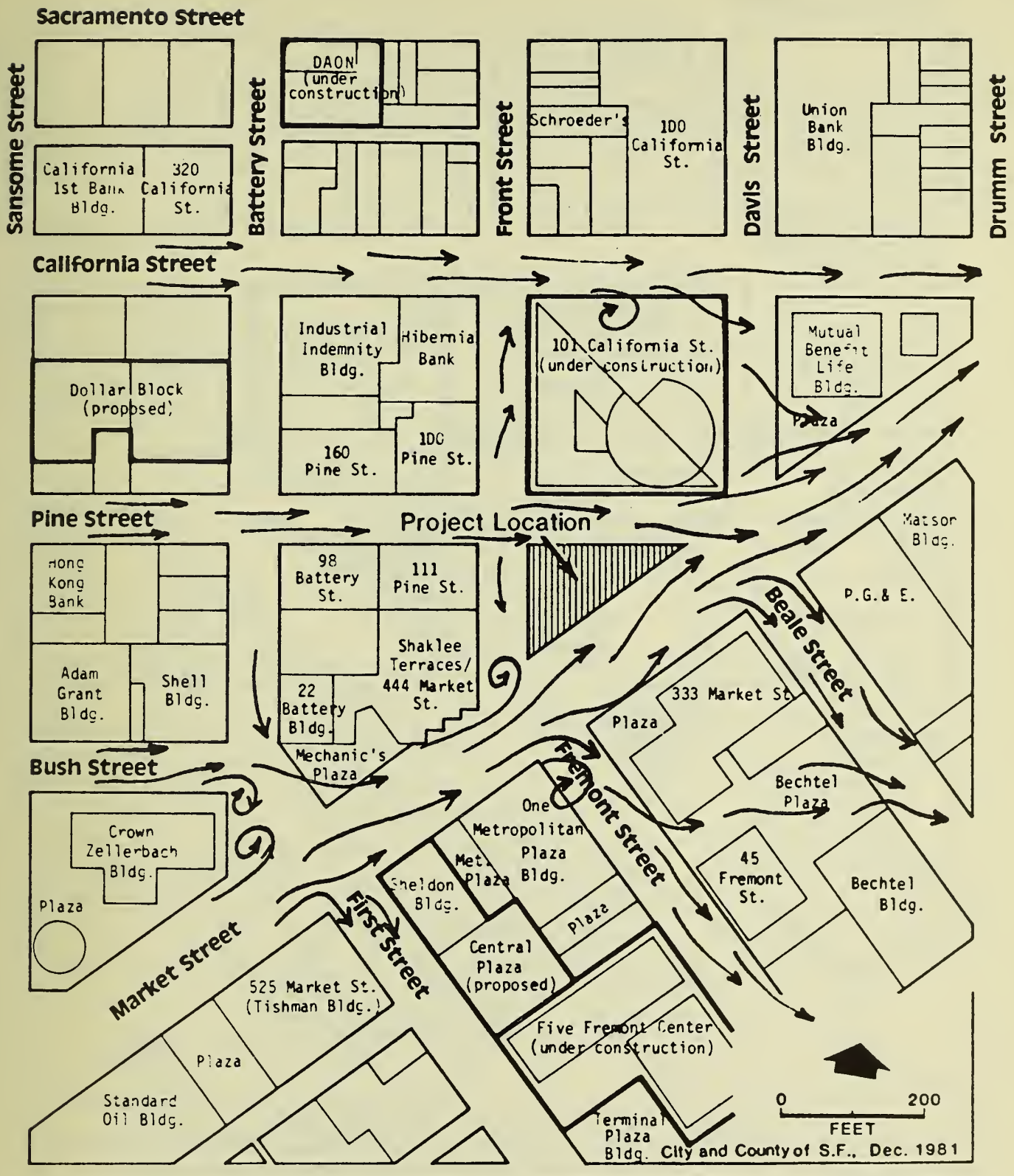
Legend

Project Location

Sites Under Development

FIGURE B4: Wind Flows for West Wind – Existing Conditions

SOURCE: Environmental Science Associates, Inc.



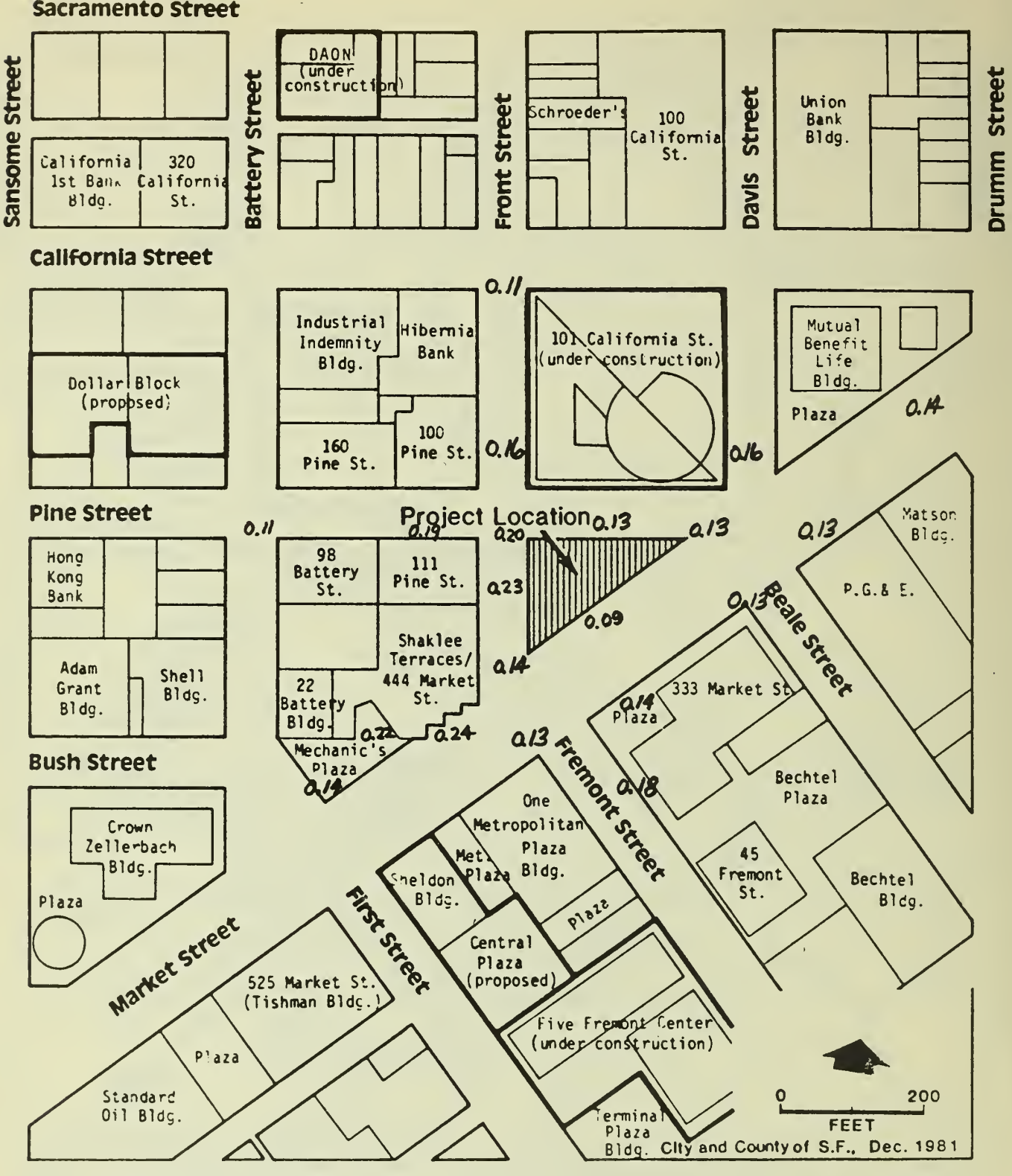
Legend

Project Location

Sites Under Development

SOURCE: Environmental Science Associates,Inc.

FIGURE B5: Wind Flows for West Wind – Project and Alternative One



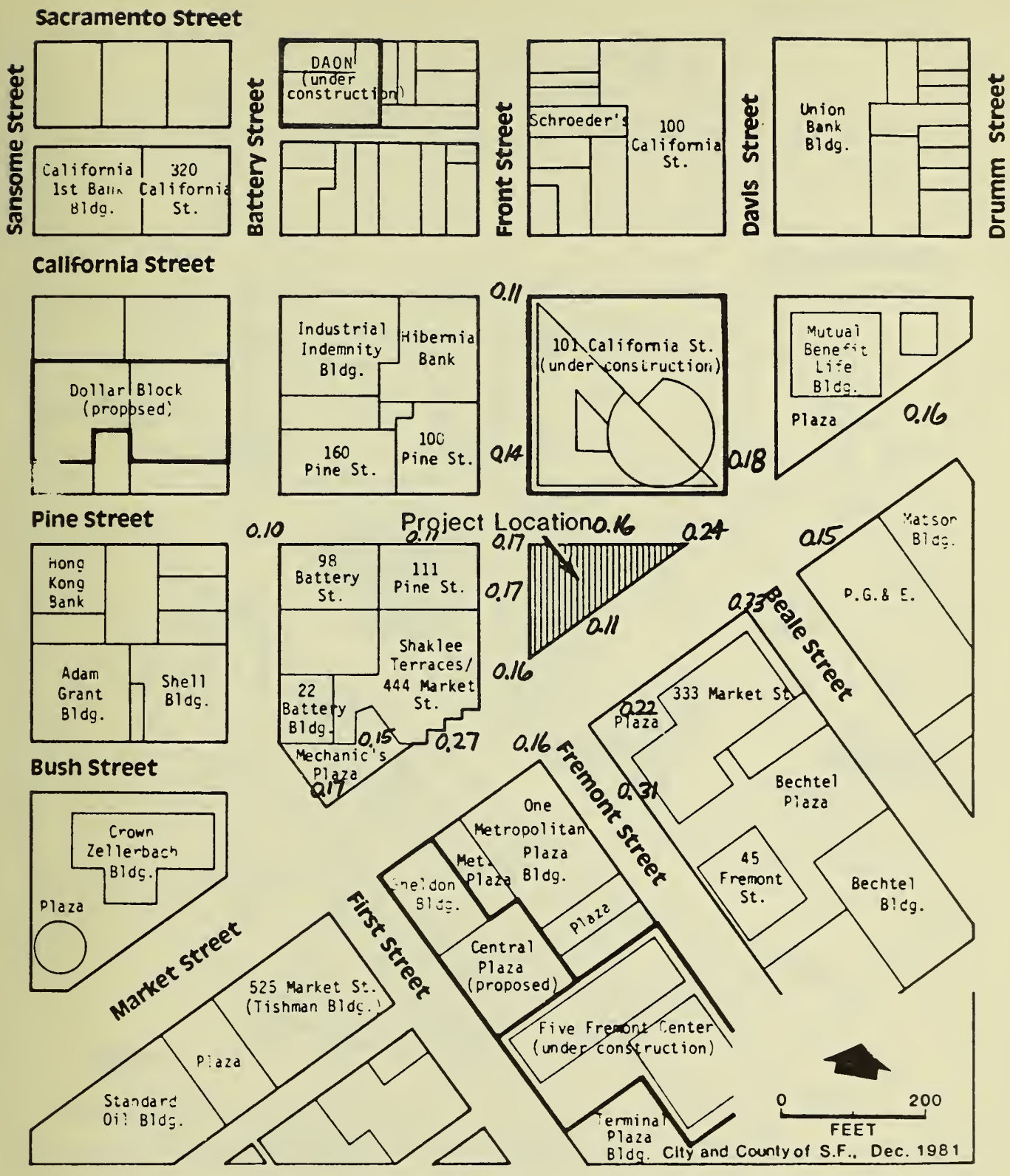
Legend

Project Location

Sites Under Development

FIGURE B6: Wind Speed Ratios for Northwest Wind – Existing Conditions

SOURCE: Environmental Science Associates, Inc.



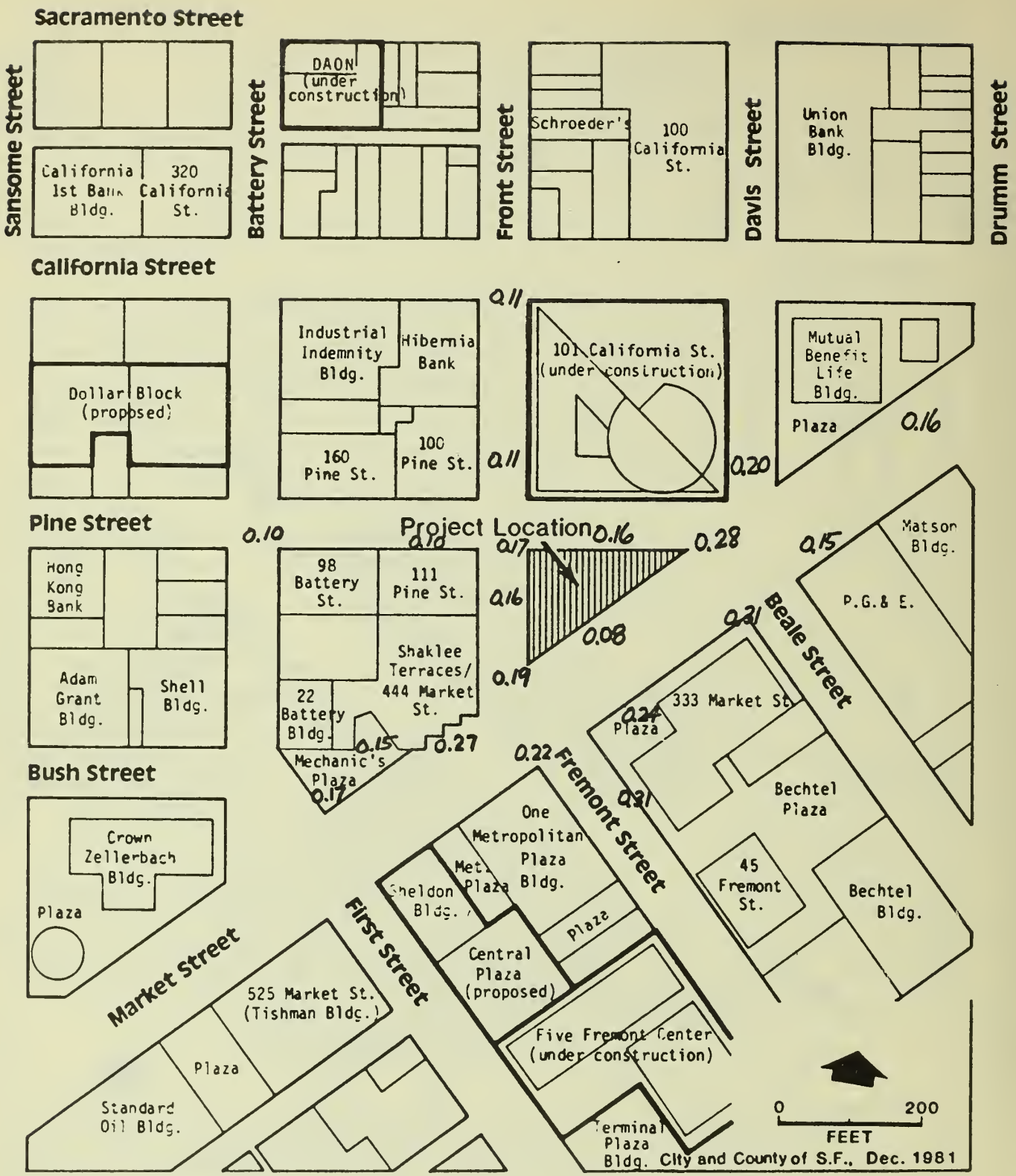
Legend

Project Location

Sites Under Development

FIGURE B7: Wind Speed Ratios for Northwest Wind – Project

SOURCE: Environmental Science Associates, Inc.



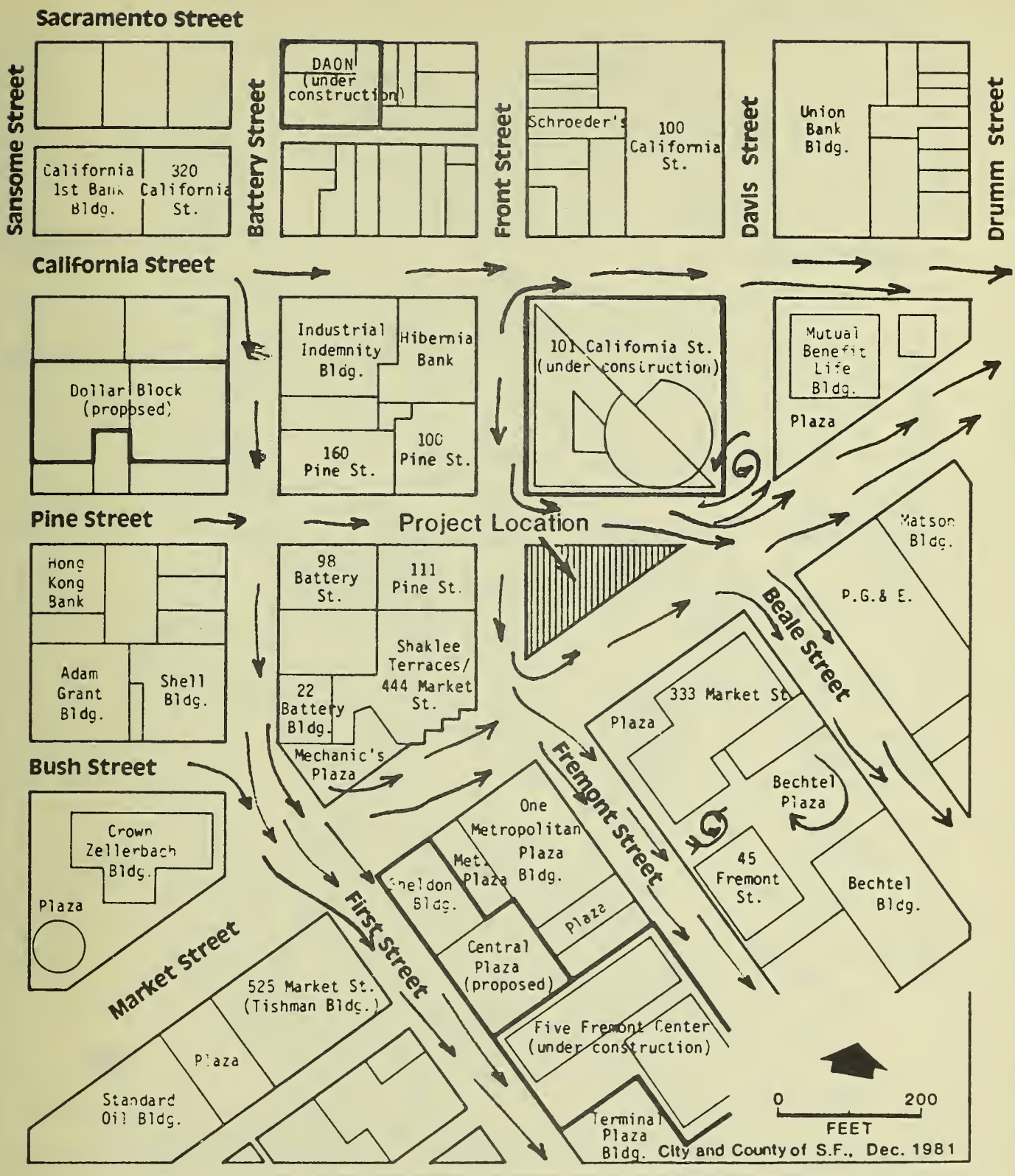
Legend

Project Location

Sites Under Development

FIGURE B8: Wind Speed Ratios for Northwest Wind - Alternative One

SOURCE: Environmental Science Associates, Inc.



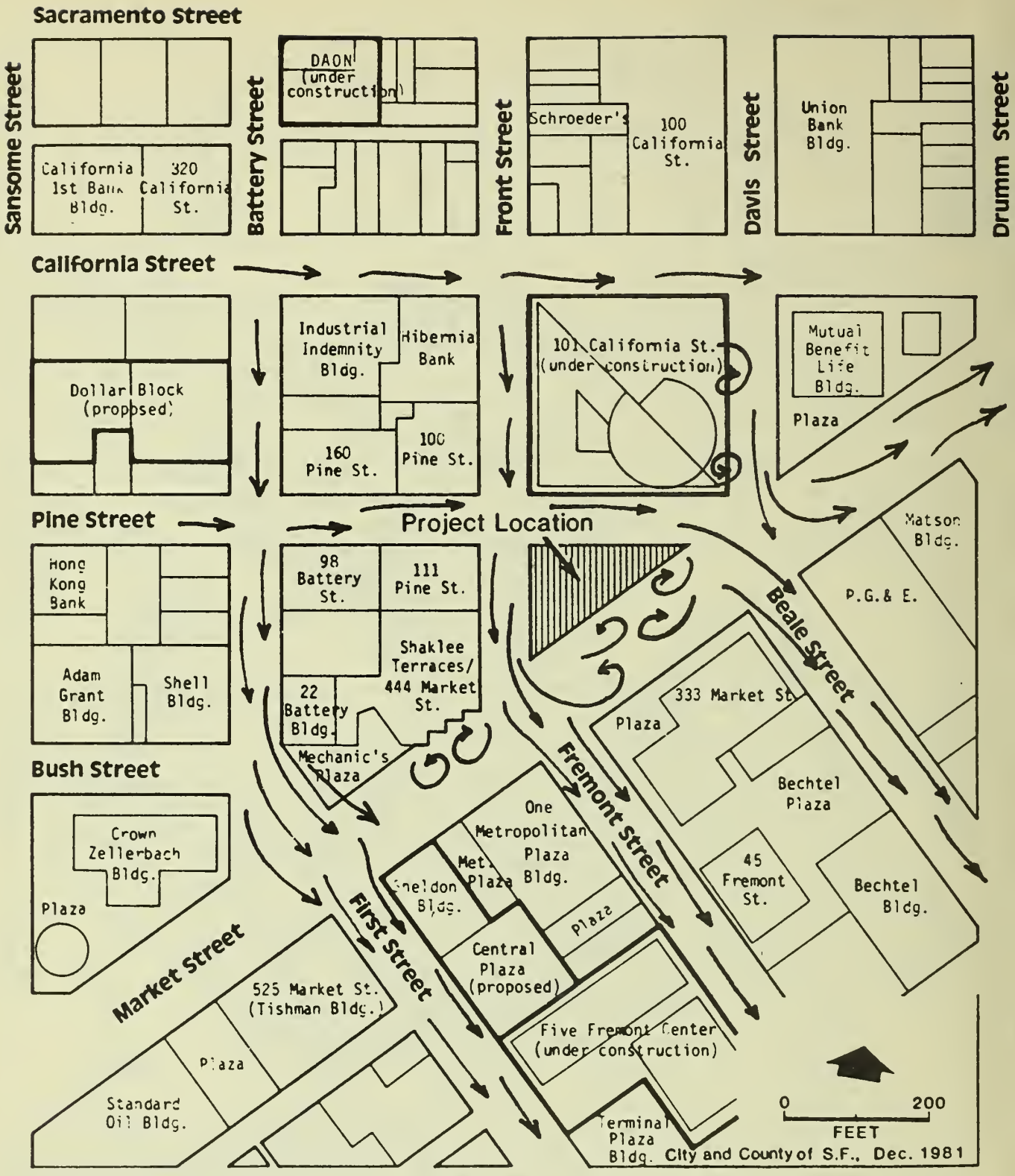
Legend

Project Location

Sites Under Development

FIGURE B9: Wind Flows for Northwest Wind – Existing Conditions

SOURCE: Environmental Science Associates,Inc.



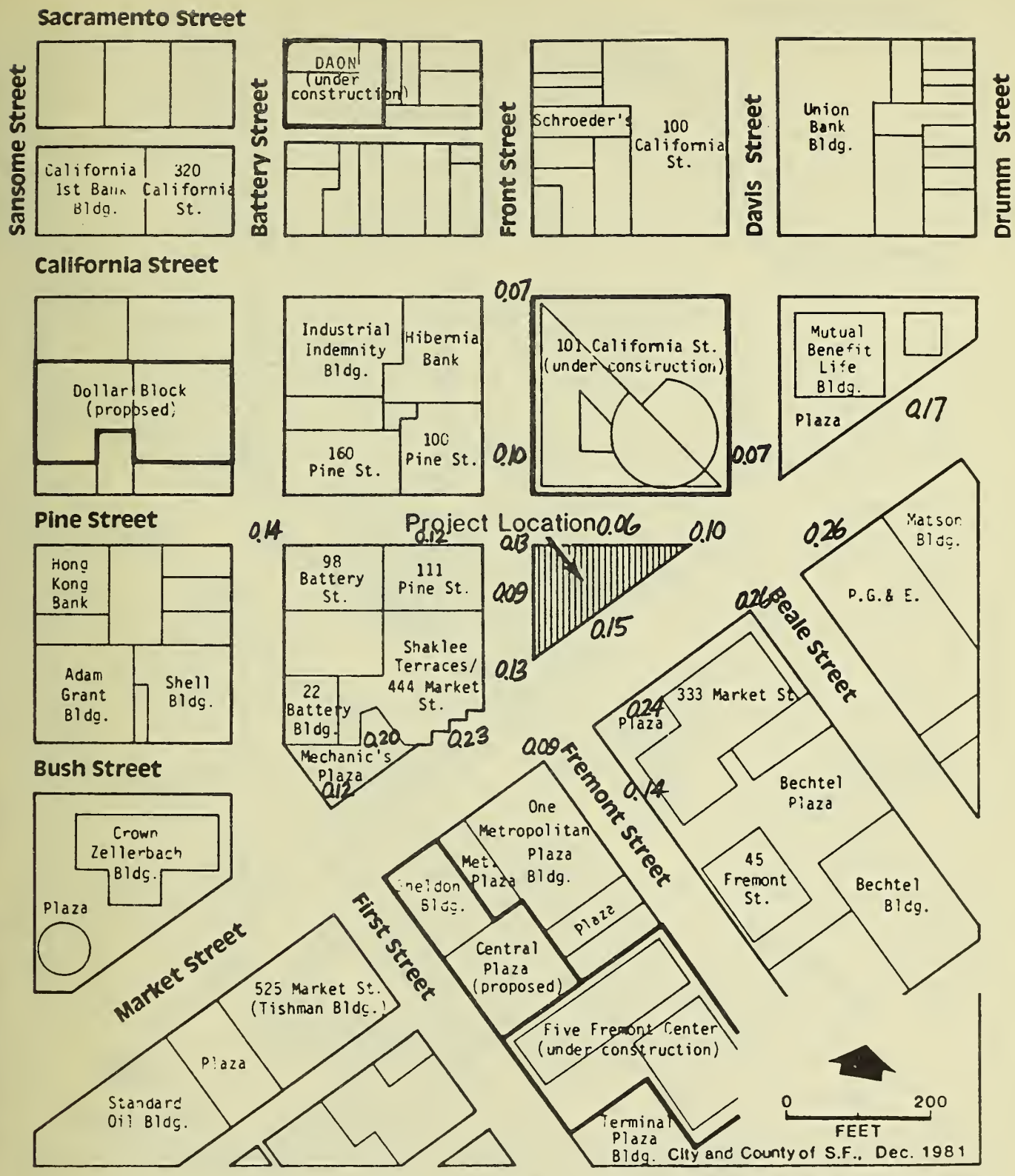
Legend

Project Location

Sites Under Development

FIGURE B10: Wind Flows for Northwest Wind -Project and Alternative One

SOURCE: Environmental Science Associates, Inc.



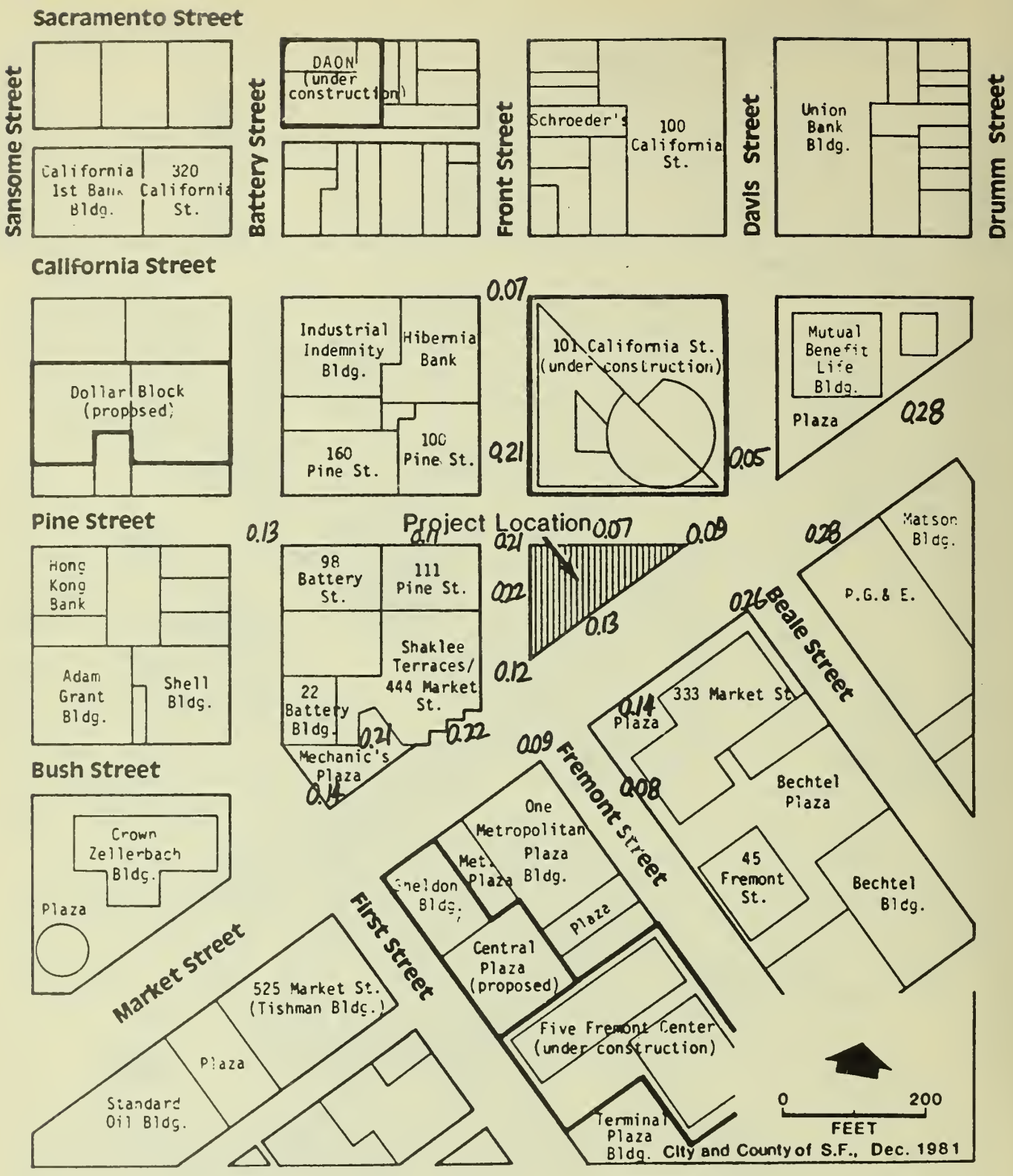
Legend

Project Location

Sites Under Development

FIGURE B11: Wind Speed Ratios for Southwest Wind – Existing Conditions

SOURCE: Environmental Science Associates, Inc.



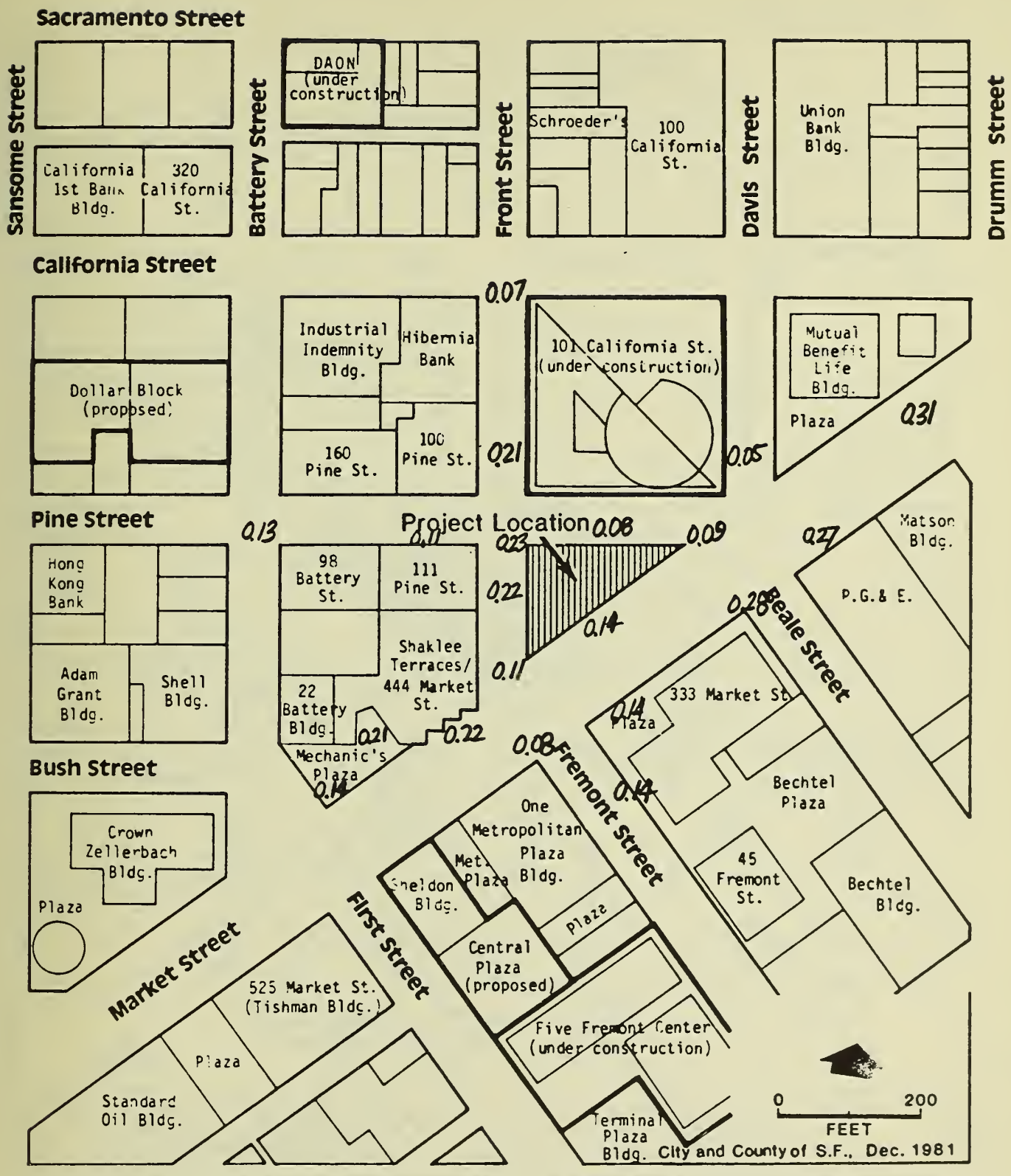
Legend

Project Location

Sites Under Development

FIGURE B12: Wind Speed Ratios for Southwest Wind – Project

SOURCE: Environmental Science Associates, Inc.



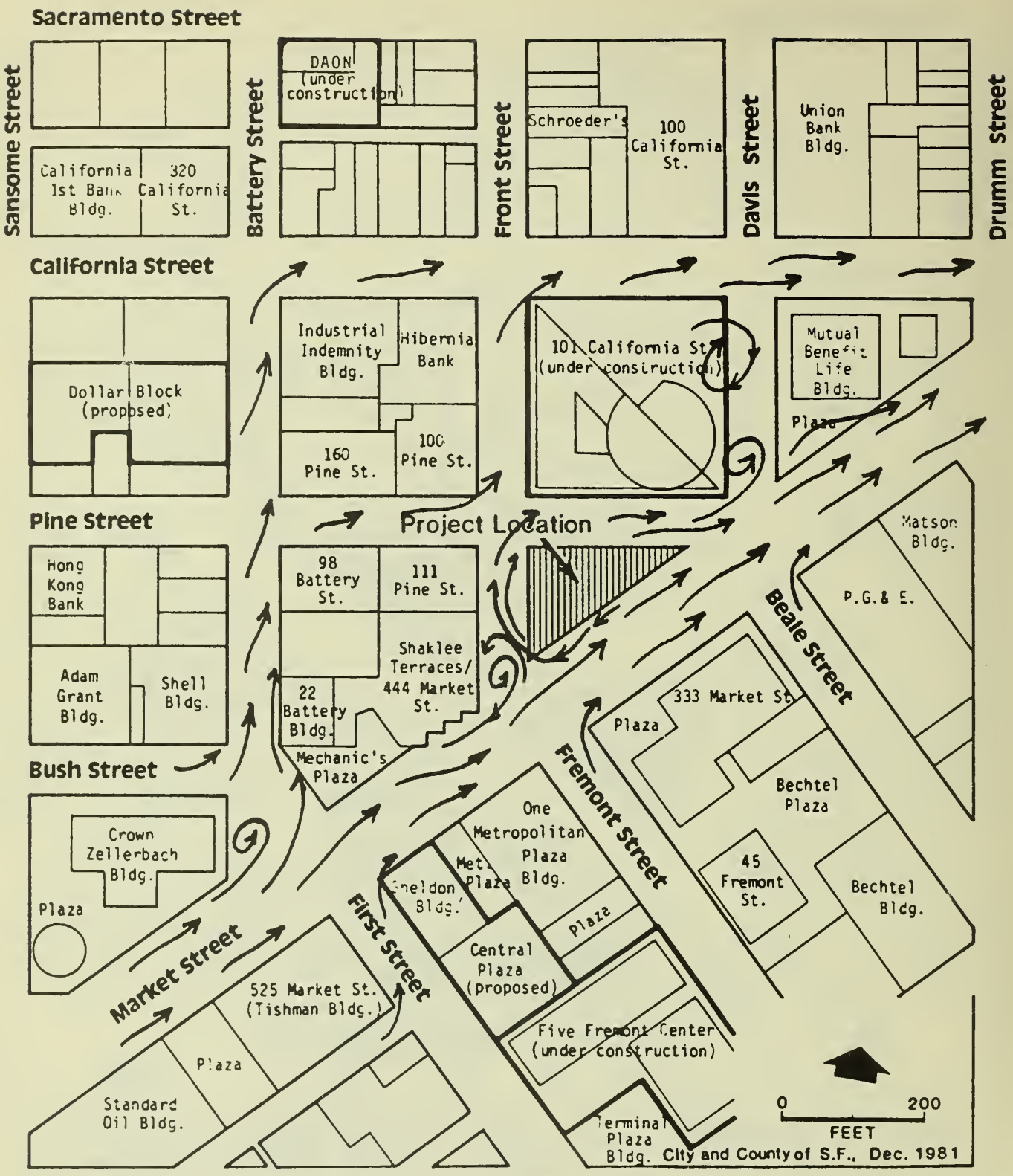
Legend

Project Location

Sites Under Development

FIGURE B13: Wind Speed Ratios for Southwest Wind – Alternative One

SOURCE: Environmental Science Associates, Inc.



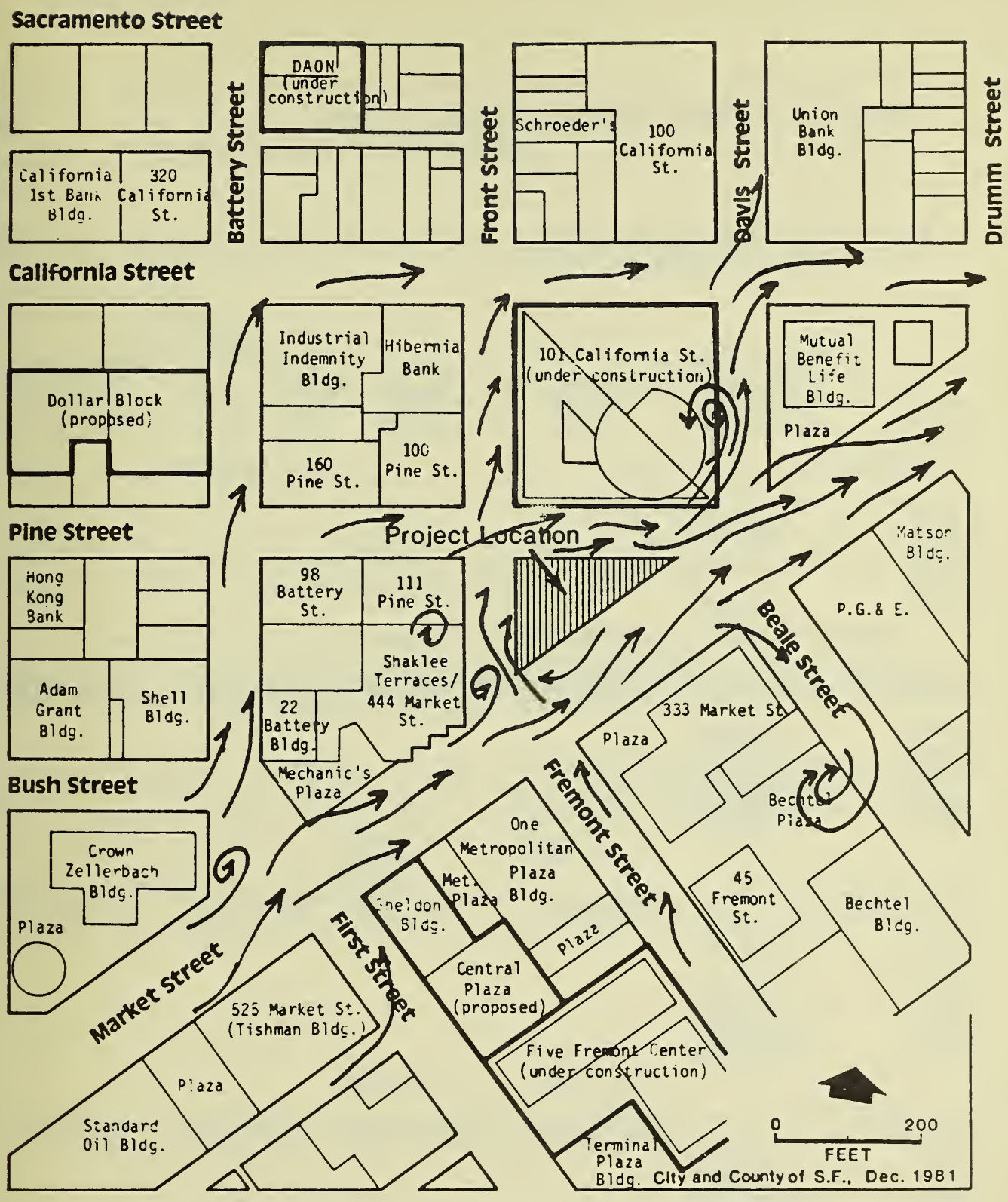
Legend

Project Location

Sites Under Development

FIGURE B14: Wind Flows for Southwest Wind - Existing Conditions

SOURCE: Environmental Science Associates, Inc.



Legend

Project Location

Sites Under Development

FIGURE B15: Wind Flows for Southwest Wind – Project and Alternative One

SOURCE: Environmental Science Associates,Inc.

APPENDIX C: EMPLOYMENT, HOUSING AND FISCAL FACTORS

TABLE C-1: MAJOR OFFICE BUILDING CONSTRUCTION AND CONVERSION IN SAN FRANCISCO AS OF NOVEMBER 1, 1981

Year	Total Gross Sq. Ft. Completed	5-Year Total	5-Year Annual Average	Cumulative Total All Office Bldgs. (Gross Sq. Ft.)	Cumulative Total All Downtown Office Bldgs.** (Net Sq. Ft.)
Pre-1960				28,145,000(a)	24,175,000(b)
1960	1,183,000				
1961	270,000				
1962	--				
1963	--				
1964	1,413,000				
		2,866,000	573,200		
1960-1964		(2,580,000)	(516,000)	30,725,000	26,754,000
1965	1,463,000				
1966	973,000				
1967	1,453,000				
1968	1,234,000				
1969	3,256,000				
		8,379,000	1,675,800		
1965-1969		(7,541,000)	(1,508,000)	38,266,000	34,295,000
1970	1,853,000				
1971	--				
1972	1,961,000				
1973	2,736,000				
1974	2,065,000				
		8,615,000	1,723,000		
1970-1974		(7,753,000)	(1,550,000)	46,019,000	42,048,000
1975	536,000				
1976	2,429,000				
1977	2,660,000				
1978	--				
1979	2,532,000				
		8,157,000	1,631,400		
1975-1979		(7,341,000)	(1,468,000)	53,360,000	49,389,000
1980	1,284,000				

TABLE C-1: MAJOR OFFICE BUILDING CONSTRUCTION AND CONVERSION IN SAN FRANCISCO AS OF NOVEMBER 1, 1981 (Continued)

1981	3,138,000			57,340,000	53,369,000
Under Construction 82,84	5,600,000				
1980-1984		(9,020,000)	(1,804,000)	62,380,000	48,409,000
Approved Projects	3,113,000			65,182,000	61,211,000

* Net equals 90 % of gross. Net new space is added at an increase factor of 90%, since it is assumed that space equal to 10% of a new building is demolished to make land available for the new replacement building.

(a) S.F. Downtown Zoning Study - Working Paper No. 1, January 1966, Appendix, Table 1, Part 1. For pre-1965, includes the area bounded by Vallejo, Franklin, Central Skyway, Bryant and Embarcadero. Also includes 1/3 of mixed use retail/office. For post-1984, includes the entire city.

(b) Gross Floor Space for downtown offices are included for the following funtional areas: Financial, Retail, Hotel, Jackson Square, Golden Gateway, Civic Center, South of Market, and Outer Market Street as defined in the 1/66 report. For post 1964, the entire area east of Franklin is included.

SOURCE: Department of City Planning

TABLE C-2: PROJECTED EFFECTS OF DOWNTOWN OFFICE DEVELOPMENT ON REGIONAL HOUSING MARKETS, 1980-85

	Residency of S.F. Office Employees*	Net Project Demand in 1985	Cumulative Demand 1979 to 1985***		Net Housing Stock Growth 1980-1985	Project Demand as % of Growth 1980 to 1985
	Percent	No. Households**	No. Emp.	No. Households	No. Units	Percent
San Francisco	40	85	31,000	17,200	5,000 to 8,000	1.0 to 1.7
Peninsula (San Mateo and Santa Clara Cos.)	18	40	13,200	8,800	75,000	0.1
East Bay (Alameda and Contra Costa Cos.)	30	60	24,000	16,000	41,000	0.1
North Bay (Marin and Sonoma Cos.)	12	25	9,300	6,200	25,000	0.1
TOTAL	100	210	77,500	48,200	146,000 to 179,000	0.1

* Weighted average of expected employees in Federal Reserve Bank (EE 78.207), 101 California Street (EE 78.27), Pacific Gateway, (EE 78.61), and Crocker National Bank (EE 78.298), from 456 Montgomery Street Final EIR (EE 78.178), p. 167.

** Housing demand was based on a formula, (the gross square footage of office space divided by 250, multiplied by 0.22), which was developed by the San Francisco City Planning Department in a memorandum entitled "Housing Requirements for Office Development in San Francisco," July 1981. The project housing demand was calculated as a net figure by subtracting the housing demand caused by the 600 existing on-site employees from the gross demand. The same formula was applied to the other regional counties.

*** Based on projected San Francisco housing demand created by downtown office development, in Sedway/Cooke, October 1979, Downtown San Francisco Conservation and Development Planning Program, Phase 1, pp. 47, 48. San Francisco growth estimates are based on ABAG, January 1980, San Francisco Bay Area Housing Activity Report, Number 2, and on Mary Schlosser, Research Analyst, Population Research Unit, California Department of Finance, telephone communication, August 13, 1980. Other housing market estimates are based solely on Department of Finance data. Growth rates are based on averaged rates (San Francisco 0.4%, Peninsula 2.2%, East Bay 1.2%, North Bay, 2.5%).

SOURCE: Environmental Science Associates, Inc.

TABLE C-3: HOUSEHOLD AFFORDABILITY*

Individual Income	Monthly Payments	$200	$400	$800	$1200	$1600	$2000	$2400
$ 8,300[d]	$374							
25,000[e]	$1,125							
30,000[e]	$1,350							
52,000[f]	$2,340							
300,000[f]	//$13,500							
Monthly Rents:		$266[a1]	$289[b1]	$455[b2]	$588[b3]			
Monthly Mortgage Payments:** (house purchase price)				$1,022 ($95,000)[c1]	$1,118 ($103,900)[a2]	$1,627 ($151,203)[c2]		$2,547 ($236,750)[c3]

*Household affordability means monthly mortgage payments calculated by assuming 1.8 workers per household and 30% of gross household income is available for housing.
**Monthly mortgage payments are calculated assuming 20% downpayment, 30-year mortgages, and a 16% interest rate, not including insurance, property taxes, or other related housing costs.

[a]1980 Census of Housing, "Selected Housing Characteristics by States and Counties 1980", October, 1981. 1. median rent 2. median house value

[b]Department of City Planning, "Rent Survey", 1980. Median rents are for: 1. studio apartments; 2. all units; 3. 3+ bedrooms.

[c]San Francisco Board of Realtors, "Multiple Sales Service", October 5, 1981. (Annual data on housing sales prices includes all homes sold from February 11, 1981 to October 1, 1981). 1. lowest price 2. median price 3. highest price

[d] U.S. Bureau of Labor Statistics, March, 1981, "Area wage survey for the San Francisco-Oakland, California Metropolitan Area." $8,300 was the mean 1980 income of inexperienced file clerks, one of the lowest-paid office occupations listed.

[e] The range of $25,000 to $30,000 is assumed to be the median income of project employees.

[f] Lynn S. Flach, Trammell Crow Company, letter, November 6, 1981. Median salary of 601 Montgomery St. employees was $52,560 and the highest salary for corporate officers was $300,000 according to a 1981 survey.

SOURCE: Environmental Science Associates

APPENDIX D: TRANSPORTATION

TABLE D-1: VEHICULAR LEVELS OF SERVICE

Level of Service	Description	Volume/Capacity* v/c Ratio
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.	0.60
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can be generaly described as very good.	0.61-0.70
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.	0.71-0.80
D.	Level of Service D describes a condition of increasing restiction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	0.81-0.90
E	Capacity occurs at level of service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting up-stream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	0.91-1.00
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	1.00

*Capacity is defined as Level of Service E.

SOURCE: San Francisco Department of Public Works, Traffic Division, Bureau of Engineering 1965.

K Ingleside - Van Ness Station

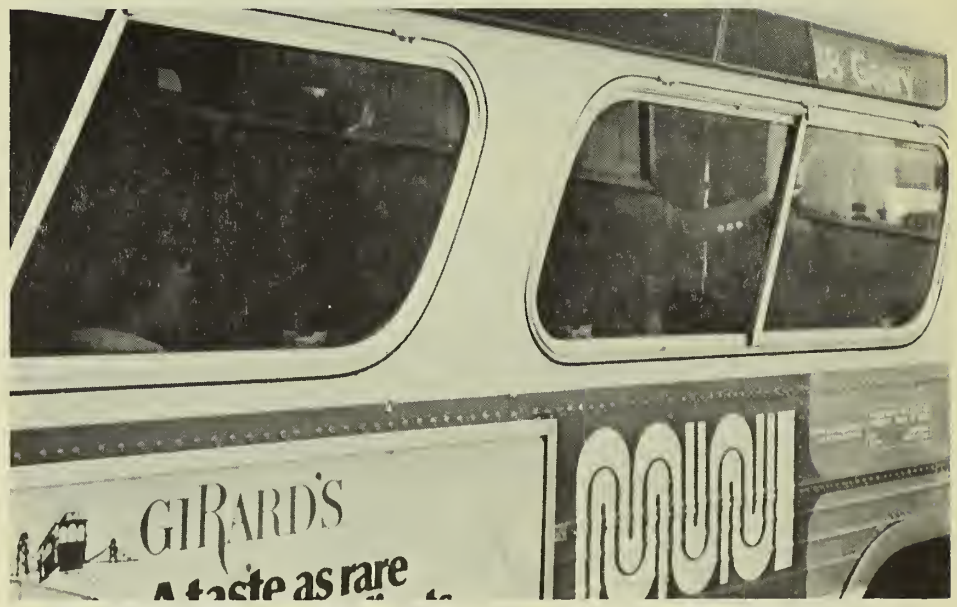
Wednesday, September 9, 1981 - 8:00 A.M. - Inbound

N Judah - Van Ness Station

Wednesday, September 16, 1981 - 5:00 P.M. - Outbound

38 Geary - Van Ness Ave. and O'Farrell St.

Wednesday, October 21, 1981 - 9:00 A.M. - Inbound



38 Geary - Van Ness Ave. and Geary Blvd.

Wednesday, October 21, 1981 - 4:20 P.M. - Outbound

SOURCE: Environmental Science Associates, Inc.

FIGURE D1: Photographs of Peak Muni Loading Conditions

11 Hoffman – Mission St. and S. Van Ness Ave.

Wednesday, October 21, 1981 – 8:10 A.M. – Inbound

30X Marina Express – Bayshore Ave. and Arieta Ave.

Wednesday, October 7, 1981 – 8:00 A.M. – Inbound

11 Hoffman – Mission St. and S. Van Ness Ave.

Tuesday, September 29, 1981 – 5:10 P.M. – Outbound

J Church – Church St. and Duboce Ave.

Tuesday, September 29, 1981 – 9:00 A.M. – Inbound

FIGURE D2 : Photographs of Peak Muni Loading Conditions

SOURCE: Environmental Science Associates, Inc.

M Ocean View - Civic Center Station

Wednesday, September 9, 1981 - 8:20 A.M. - Inbound

14 Mission - Mission St. and S. Van Ness Ave.

Tuesday, September 29, 1981 - 5:45 P.M. - Outbound

L Taraval - Van Ness Station

Wednesday, September 16, 1981 - 4:50 P.M. - Outbound

N Judah - Irving St. and Ninth Ave.

Tuesday, September 29, 1981 - 8:20 A.M. - Inbound

SOURCE: Environmental Science Associates, Inc.

FIGURE D3: Photographs of Peak Muni Loading Conditions

TABLE D-2: DAILY PERSON TRIPS BY MODE

Mode	Percent of Total Daily Trips by Mode	388 Market St.Total Daily Person Trips	All Projects Total Daily Person Trips
Auto:			
SF	30.7	1290	68,400
East Bay	6.3	270	14,000
Peninsula	5.0	215	11,100
North Bay	1.3	55	3,000
Auto Total	43.3	1,830	96,400
Transit:			
Transit Total	38.7	1,630	86,200
Other:			
Other Total	20.0	840	44,600
Total with Muni Transfers:	102 %	4,300	227,200

SOURCE: Environmental Science Associates, Inc.

TABLE D-3: OBSERVED OUTBOUND LOAD FACTORS ON MUNI ROUTES SERVING THE PROJECT AREA BETWEEN 4:30 AND 5:30 PM (Not Peak Loadings on Route) *

Line	Load Factor **
1X	0.5
2	0.2-0.7
7	0.1-0.7
8	0.1-0.7
21	1.0
31	0.1-0.2
31X	0.3-0.7
38AX	0.7
38BX	0.3-0.7
42	0.3-0.7
45	0.2-0.7
71	0.2
72	0.7
L	0.9
M	0.6
N	0.5

* This survey of load factors was conducted on November 2, 1981, of loadings at departure from stops nearest the site.
** The load factor is the ratio of the number of passengers to the recommended maximum. On lines where more than one value was observed, a range of values is given.

SOURCE: Environmental Science Associates.

TABLE D-4: EXISTING WORST P.M. PEAK-HOUR CONDITIONS ON OUTBOUND MUNI VEHICLES (Lines Passing Within 2,000 Ft. of the Site)

Lines	Condition
2, 12, 14, 14X, 15, 31 38L, 45, 71, 72	Passenger loading is more than 100% of the recommended maximum;** there is at least one standee for every two seated patrons. In the aisle, physical contact and conflicts are unavoidable. Crowding occurs at doors, delaying boarding or departure of patrons at some stops.
1, 1X, 5, 6, 7, 9, 14GL, 16X, 21, 25, 30, 30X, 31X, 38, 38AX, 42, K, L, M, N	Passenger loading is 80-100% of the recommended maximum;** there are standees and seldom a vacant seat. In the aisle, standees do not touch each other but are uncomfortably close together on some lines. Movement in the aisle results in some physical contact when conflicts occur. Crowding occurs at doorways on some lines but seldom results in delays in boarding or departure.
4, 8, 9, 17X, 27, 38BX, 40X, J	Passenger loading is less than 80% of the recommended maximum;** there are standees on some lines and a few vacant seats on others. In the aisle, patrons can avoid physical contact and conflicts, and there is no congestion at doors.

* This table is based on 1980 ridership counts by Muni, with estimated load factors incremented by 0.1 to reconcile them with conditions existing in 1982. The description of conditions for standing patrons is after Fruin, (Designing for Pedestrian) reviewed in English by Pushkarev and Zupan in Urban Space for Pedestrians, MIT Press, 1975.

** The recommended maximum is approximately 150% of seated capacity on buses and 220% on LRV's.

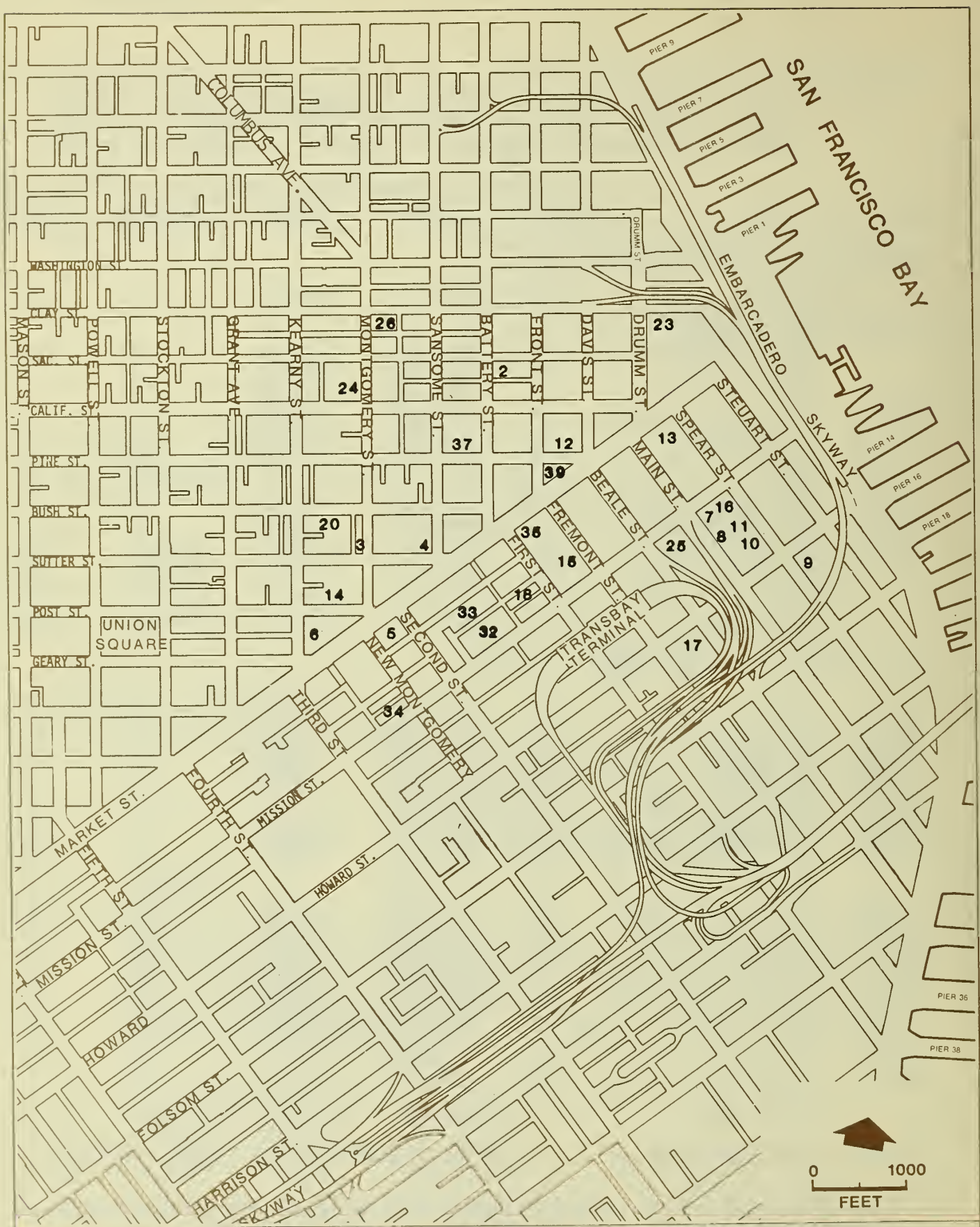
SOURCE: Environmental Science Associates

TABLE D-5: LIST OF PROJECTS PROPOSED, APPROVED, OR UNDER CONSTRUCTION, WITHIN 2000 FT. OF THE SITE TO BE COMPLETED BY 1984, INCLUDED IN THE CUMULATIVE ANALYSIS OF LOCAL VEHICULAR TRAFFIC, TRANSIT AND PEDESTRIAN EFFECTS

EE No.	Project	Figure D4 Location	Floor Area in Gross Sq. Ft. Office	Retail	Housing	Parking Spaces
NORTH OF MARKET PROJECTS (NOM)						
78.27	101 California	12	1,153,900	53,000	0	260
78.298	One Montgomery (Crocker Bank)	14	568,000	86,000	0	100
	Embarcadero 4	23	750,000	90,000	0	?
78.334	One Sansome	4	603,700	17,400	0	0
79.57	Battery & Sacramento	2	233,000	3,800	0	0
79.178	456 Montgomery	24	126,400	21,000	0	?
80.296	Bank of Canton	26	168,000	0	0	16
	388 Bush	20	584,000	0	80,000	56
80.339	S.F. Fed. S&L Hdqtrs.	6	158,200	1,600	0	23
80.26	101 Montgomery	3	248,350	5,900	0	15
81.249E	333 California	37	606,000	12,000	100,000	150
81.195	388 Market Street	39	234,500	10,000	85,900	45
	TOTAL NOM		5,434,050	300,700	265,900	665
SOUTH OF MARKET PROJECTS (SOM)						
78.61	Pacific Gateway	25	564,000	7,500	0	81
78.207	Fed. Reserve Bank	13	460,000	0	0	12
79.196	315 Howard	17	340,230	5,000	0	?
79.236	101 Mission	16	181,960	4,000	0	16
80.57	25 Jessie Street	18	103,233	7,941	0	0
78.413	150 Spear	11	260,000	4,800	0	56
80.268	Five Fremont Center	15	791,000	35,000	0	160
80.355	One New Montgomery Place	5	333,500	0	222,500	100
81.493E	71 Stevenson Street	33	321,156	10,275	0	74
81.492E	90 New Montgomery	34	127,192	4,980	0	14
80.349	Spear/Main	10	263,050	1,865	0	13
81.61E	135 Main Street	8	260,500	4,000	0	22
81.113E	Central Plaza	35	334,200	12,500	0	60
81.183E	Mission/Main	7	341,200	4,600	0	46
81.297E	562 Mission Street	32	540,000	16,000	0	73
80.337	201 Spear	9	250,000	0	0	0
	TOTAL SOM		5,471,221	118,461	222,500	727
TOTAL PROJECTS (SQUARE FEET)			10,905,271*	419,161	488,400	1,392

* This total differs from Table C-1 because this table includes proposed projects that have not been approved, within 2000 ft. of the project site.

SOURCE: Environmental Science Associates, Inc.



SOURCE: Environmental Science Associates, Inc.

FIGURE D4: Projects under Construction, Approved or Proposed (See Table D5)

APPENDIX E: AIR QUALITY

TABLE E-1: SAN FRANCISCO AIR POLLUTANT SUMMARY 1978-1980

STATIONS: 939 Ellis Street and 900 23rd Street, San Francisco*

POLLUTANT:	STANDARD	1978	1979	1980*
OZONE (O_3) (Oxidant)				
1-hour concentration (ppm /a/)				
Highest hourly average	(0.08) 0.12 /b,c/	0.11	0.08	0.09
Number of standard excesses		(4) 0	0	0
Expected Annual Excess/c/		0.3	0.0	0.0
CARBON MONOXIDE (CO)				
1-hour concentration (ppm)				
Highest hourly average	35 /b/	17	20	10
Number of standard excesses		0	0	0
8-hour concentration (ppm)				
Highest 8-hour average	9 /b/	9.4	13.8	7.5
Number of standard excesses		1	2	0
NITROGEN DIOXIDE (NO_2)				
1-hour concentration (ppm)				
Highest hourly average	0.25 /d/	0.30	0.16	0.17
Number of standard excesses		4	0	0
SULFUR DIOXIDE (SO_2)				
24-hour concentration (ppm)				
Highest 24-hour average	0.05 /d/	0.024	0.034	0.018
Number of standard excesses/e,f/		0	0	0
TOTAL SUSPENDED PARTICULATE (TSP)				
24-hour concentration (ug/m3 /g/)				
Highest 24-hour average	100 /d/	128	117	173
Number of standard excesses/f/		1	1	6
Annual concentration (ug/m3)				
Annual Geometric Mean	60 /d/	42	42	52
Annual standard excess		No	No	No
LEAD				
Calendar quarter concentration (mg/m3)				
Highest quarterly average	1.5 /b/	1.19	0.95	0.53
Number of standard excesses		0	0	0

* In January 1980 all of the pollutant-monitoring functions of the 939 Ellis St. Station were transferred to the 900 23rd St. Station.

Table E-1 (continued)

/a/ ppm: parts per million.
/b/ National standard, not to be exceeded more than once per year (except for annual standards which are not to be exceeded).
/c/ The national ozone standard was revised from 0.08 ppm to 0.12 ppm in January 1979. The number of excesses shown in parentheses is of the old 0.08 ppm standard in effect at the time. Expected Annual Excess is a three-year average of annual excesses of the new 0.12 ppm standard.
/d/ California standard, not to be equaled or exceeded.
/e/ The sulfur dioxide standard is considered to be exceeded only if there is a concurrent excess of the state ozone or suspended particulate standards at the same station. Otherwise, the national standard of 0.14 ppm applies.
/f/ Number of observed excess days (measurements taken once every six days).
/g/ ug/m^3: micrograms per cubic meter.
SOURCE: BAAQMD, 1978 - 1980, Contaminant and Weather Summaries.